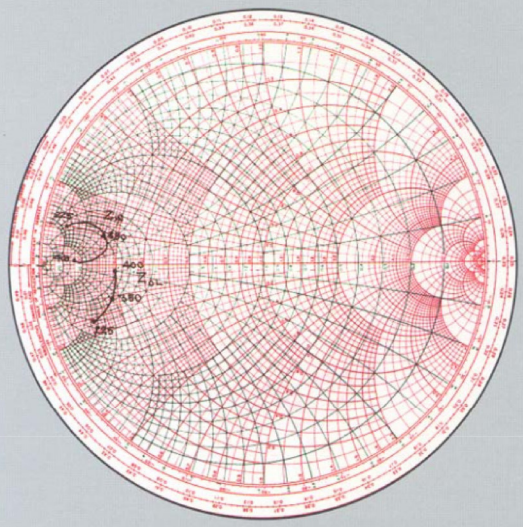
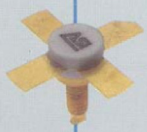
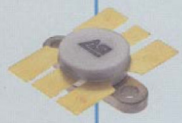
RF & MICROWAVE POWER TRANSISTORS







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INTRODUCTION

ASI was established in 1979 to serve the semiconductor needs of the North American OEM community. In the ensuing two decades ASI has grown to a position of leadership serving commercial and military markets throughout the world.

ASI has built its reputation by providing superior quality semiconductors, responsive service and on time product delivery.

ASI offers a wide range of standard silicon based semiconductors. The transistor product line includes small signal and power types featuring bipolar and FET devices. The diode product line encompasses power rectifiers, thyristors and microwave diodes. Whether your design requires a standard or custom transistor, ASI has the right solution.

CATALOG

This is the first ASI short form catalog featuring RF power transistors. It includes all standard silicon bipolar and MOSFET power transistors.

This catalog is arranged by major product line and within each product line it is arranged by frequency and application. An alphanumeric part number index is located in the front of the catalog. A comprehensive industry cross-reference is located at the end of the product section. As with any cross-reference

GENERAL INFORMATION

HOW TO ORDER:

Orders may be placed directly with our sales department or through our authorized sales representatives. Telephone orders are considered to be advance verbal instructions and written confirmation, sent by mail or fax is required. The minimum order is $250.00 per order.

TERMS AND CONDITIONS:

Prices are quoted (F.O.B.) factory and are valid for thirty (30) days from the date of the quotation unless otherwise specified.

Payment terms are 2% ten days, net thirty from date of invoice if credit has been approved. Complete terms and conditions of sale appear on ASI packing lists.

WARRANTY:

ASI warrants each transistor to meet all published specifications and to be free from defects in material and workmanship. The company's liability under this warranty is limited to repair, adjustment and/or replacement of defective parts returned, freight paid by Buyer, to the factory within one year from date of shipment. Damage by misuse or abnormal conditions of operation void this warranty.

RETURNED MATERIAL:

SALES & ENGINEERING SUPPORT:

Many of the products manufactured and distributed by ASI are described in more detail on individual data sheets. Datasheets are available on our website at:

www.advancedsemiconductor.com

ASI maintains a staff of sales and engineering professionals to assist with information on the capabilities, characteristics, and application of the transistors listed within this catalog. For application assistance and/or additional information you may reach us at:

sales@advancedsemiconductor.com

DISCLAIMER:

ASI reserves the right to change specifications, models, prices or designs without prior notice and without liability for such changes.

ASI products are not designed, intended or authorized for use in systems intended for surgical implant, life support, life sustaining or any application in which a failure of the ASI product could create a situation where personal injury or death may occur.

FSCM/EIA CODE:

ASI has been assigned FSCM No. **4U751** by the

QUALITY ASSURANCE & RELIABILITY

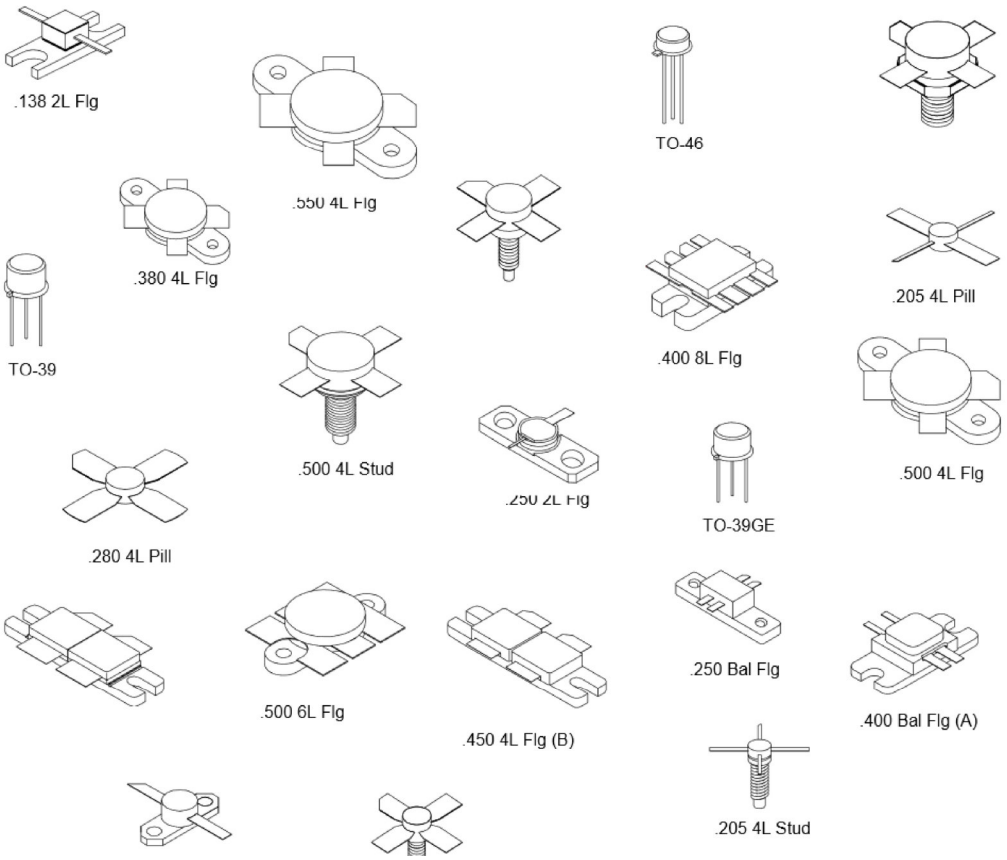
ASI is committed to achieving excellence in customer service and product quality. The current quality system is in accordance with MIL-I-45208 and incorporates elements of MIL-Q-9858A. A program to implement ISO9000 is under way. Test equipment is calibrated in accordance with MIL-C-45662.

ASI RF/Microwave power transistors incorporate the ***Omnigold***™ Metalization system insuring maximum reliability. All power products utilize eutectic die bonding for superior die attach integrity, ruggedness and thermal resistance performance.

ASI offers three (3) reliability grades including an equivalent to JANTX. ASI utilizes procedures based on MIL-S-19500 and MIL-STD-750 for device pre-conditioning, screening and qualification testing. Summaries of the three reliability grades are detailed in the chart below.

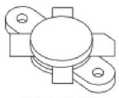
PRODUCT INDEX

PRODUCT INDEX

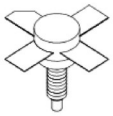

.138 2L Flg
.550 4L Flg
TO-46
.380 4L Flg
.205 4L Pill
TO-39
.400 8L Flg
.500 4L Stud
.500 4L Flg
.250 2L Flg
TO-39GE
.280 4L Pill
.250 Bal Flg
.500 6L Flg
.450 4L Flg (B)
.400 Bal Flg (A)
.205 4L Stud

HF SSB

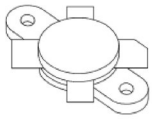
ASI HF transistors are characterized for broadband amplifier operation, 2-30MHz devices provide high linear power output for a variety of military, commercial and amateur communication equipment.



.380 4L Flg



.380 4L Stud



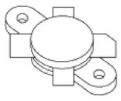
.500 4L Flg

12.5 Volt, Class AB Linear

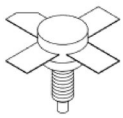
PART NUMBER	FREQ. MHz	P_{OUT} Min. Watts (pep)	P_G Min. dB	BIAS V_{CE} Volts	BIAS I_{CQ} mA	IMD_3 dBc	$?_{JC}$ Max. °C/W	PACKAGE STYLE
HF5-12F	30	5.0	20.0	12.5	15	-30	13.5	.380 4L Flg
HF5-12S	30	5.0	20.0	12.5	15	-30	13.5	.380 4L Stud
HF10-12F	30	10	20.0	12.5	20	-30	4.4	.380 4L Flg
HF10-12S	30	10	20.0	12.5	20	-30	4.4	.380 4L Stud
HF20-12F	30	20	18.0	12.5	25	-30	2.2	.380 4L Flg
HF20-12S	30	20	18.0	12.5	25	-30	2.2	.380 4L Stud
HF50-12F	30	50	16.0	12.5	75	-30	1.05	.380 4L Flg
HF50-12S	30	50	16.0	12.5	75	-30	1.05	.380 4L Stud
HF75-12	30	75	13.0	12.5	100	-30	0.65	.500 4L Flg
HF100-12	30	100	12.0	12.5	100	-30	0.6	.500 4L Flg

All transistors are configured common emitter.

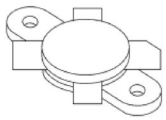
All transistors are configured common emitter.



.380 4L Flg



.380 4L Stud



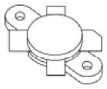
.500 4L Flg

50 Volt, Class AB Linear

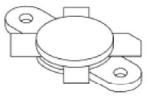
PART NUMBER	FREQ. MHz	P_{OUT} Min. Watts $_{(pep)}$	P_G Min. dB	BIAS V_{CE} Volts	BIAS I_{CQ} mA	IMD_3 dBc	θ_{JC} Max. °C/W	PACKAGE STYLE
HF75-50F	30	75	14	-30	50.0	50	2.0	.500 4L Flg
HF75-50S	30	75	14	-30	50.0	50	2.0	.380 4L Stud
HF150-50F	30	150	14	-30	50.0	100	0.75	.500 4L Flg
HF150-50S	30	150	14	-30	50.0	100	0.75	.500 4L Stud (A)
HF220-50	30	220	13	-30	50.0	150	0.55	.500 4L Flg
HF250-50	30	220	14	-30	50.0	150	0.40	.550 4L Flg

All transistors are configured common emitter.

Class AB Linear, MOSFET



.380 4L Flg



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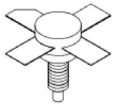
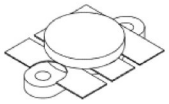


.380 4L Stud



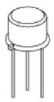
.500 6L Flg

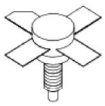
12.5 Volt, Low-Band

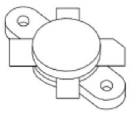
PART NUMBER	FREQ. Nom. MHz	P_{OUT} Min. Watts	P_G Min. dB	V_{CC} Volts	?C Typ. %	C_{OB} Max. pF	?JC Max. °C/W	PACKAGE STYLE
VLB10-12F	50	10	16.0	12.5	60	65	5.0	.380 4L Flg
VLB10-12S	50	10	16.0	12.5	60	65	5.0	.380 4L Stud
VLB40-12F	50	40	13.0	12.5	60	100	2.5	.380 4L Flg
VLB40-12S	50	40	13.0	12.5	60	100	2.5	.380 4L Stud
VLB70-12F	50	70	10.0	12.5	60	270	1.05	.380 4L Flg
VLB70-12S	50	70	10.0	12.5	60	270	1.05	.380 4L Stud
VLB100-12	50	100	7.0	12.5	60	400	0.65	.500 4L Flg

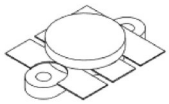
All transistors are configured common emitter and are operated Class C.

12.5 & 28 Volt, Mid-Band


TO-39


.380 4L Stud


.380 4L Flg


.500 6L Flg

12.5 Volt, High-Band

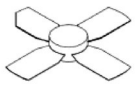
PART NUMBER	FREQ. Nom. MHz	P_{OUT} Min. Watts	P_G Min. dB	V_{CC} Volts	$?_C$ Typ. %	C_{OB} Max. pF	$?_{JC}$ Max. °C/W	PACKAGE STYLE
VHB1-12T	175	1.0	10	12.5	60	4	20	TO-39
VHB10-12F	175	10	10	12.5	60	45	8.8	.380 4L Flg
VHB10-12S	175	10	10	12.5	60	45	8.8	.380 4L Stud
VHB25-12F	175	25	10	12.5	60	110	3.5	.380 4L Flg
VHB25-12S	175	25	10	12.5	60	110	3.5	.380 4L Stud
VHB40-12F	175	40	8.5	12.5	60	135	2.9	.380 4L Flg
VHB40-12S	175	40	8.5	12.5	60	135	2.9	.380 4L Stud
VHB80-12*	175	80	7	12.5	60	380	0.75	.500 6L Flg
VHB100-12*	175	100	6	12.5	60	420	0.65	.500 6L Flg

All transistors are configured common emitter and are operated Class C.
**Features internal input matching network*

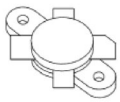
RF Power MOSFETs

VHF& UHF

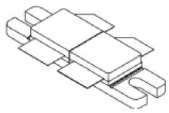
Our MOSFETS are designed for high power linear amplifier applications at frequencies up to 400 MHz.



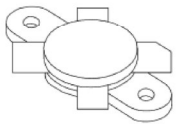
.280 4L Pill



.380 4L Flg



.400 Bal Flg



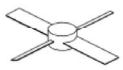
.500 4L Flg

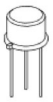
175 MHz, VHF

PART NUMBER	FREQ. Nom. MHz	P_{OUT} Min. Watts	P_G Min. dB	BIAS V_{DS} Volts	BIAS I_{DQ} mA	$?_D$ Typ. %	$?_{JC}$ Max. °C/W	PACKAGE STYLE
VFT5-28SL	175	5.0	20	28.0	50	55	10	.280 4L Pill
VFT5-28	175	5.0	13	28.0	50	55	10	.380 4L Flg
VFT15-28	175	15	13	28.0	25	60	3.2	.380 4L Flg
VFT30-28	175	30	13	28.0	25	60	1.8	.380 4L Flg
VFT45-28	175	45	12	28.0	25	60	1.75	.380 4L Flg
VFT80-28	175	80	10	28.0	25	60	1.5	.380 4L Flg
VFT150-28	175	150	10	28.0	250	60	0.6	.500 4L Flg
VFT300-28	175	300	12	28.0	500	55	0.35	.400 Bal Flg (D)
VFT30-50	175	30	15	50.0	100	60	1.52	.380 4L Flg
VFT150-50	175	150	13	50.0	250	55	0.6	.500 4L Flg

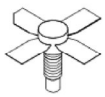
UHF

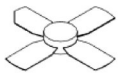
A broad range of 12.5 and 24volt, Class C power devices are offered for FM Land Mobile and FM Base Station applications.

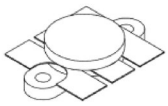

.205 4L Pill

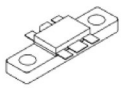

TO-39


TO-39GE


.280 4L Stud


.280 4L Pill


.500 6L Flg

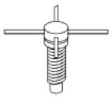

.230 6L Flg

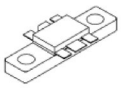
FM Land Mobile

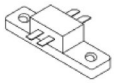
PART NUMBER	FREQ. Nom. MHz	P_{OUT} Min. Watts	P_G Min. dB	V_{CC} Volts	η_C Typ. %	C_{OB} Max. pF	θ_{JC} Max. °C/W	PACKAGE STYLE
ULBM05	470	0.5	13.0	12.5	60	4	70.0	.205 4L Pill
ULBM2T	470	2.0	6.0	12.5	55	10	35.0	TO-39
ULBM2TE	470	2.0	8.0	12.5	55	10	35.0	TO-39GE
ULBM2	470	2.0	10.0	12.5	60	10	35.0	.280 4L Stud
ULBM2SL	470	2.0	10.0	12.5	60	10	35.0	.280 4L Pill
ULBM5	470	5.0	8.5	12.5	60	22	12.0	.280 4L Stud
ULBM5SL	470	5.0	8.5	12.5	60	22	12.0	.280 4L Pill
ULBM10	470	10	7.0	12.5	60	25	7.0	.280 4L Stud
ULBM15*	470	15	7.5	12.5	60	50	5.0	.500 6L Flg
ULBM25*	470	25	6.5	12.5	60	80	2.5	.500 6L Flg
ULBM35*	470	35	6.0	12.5	60	110	1.5	.500 6L Flg

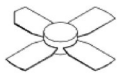
UHF

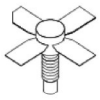
ASI offers broadband transistors that are characterized for UHF military communications and other wideband applications.

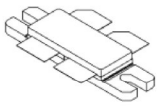

.205 4L Stud

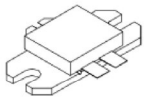

.230 6L Flg


.250 Bal Flg


.280 4L Pill

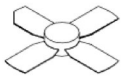

.280 4L Stud

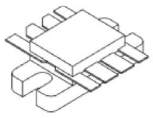

.400 Bal Flg (C)

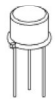

.450 Bal Flg (A)

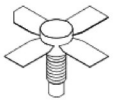
Cellular Base Station

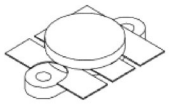
PART NUMBER	FREQ. Nom. MHz	P_{OUT} Min. Watts	P_G Min. dB	BIAS V_{CC} Volts	BIAS I_{CQ} mA	C_{OB} Max. pF	$?_{JC}$ Max. °C/W	PACKAGE STYLE
CBSL1[1]	960	1.0	10.0	24.0	125	5	25.0	.280 4L Stud
CBSL1SL[1]	960	1.0	10.0	24.0	125	5	25.0	.280 4L Pill
CBSL2[1]	960	2.0	9.0	24.0	200	5	20.0	.280 4L Stud
CBSL2SS[2]	960	2.0	9.0	24.0	na	3.5	25.0	.205 4L Stud
CBSL6*	960	6.0	10.0	24.0	25	8.5	3.3	.230 6L Flg
CBSL15*	960	15	8.0	24.0	75	25	6.0	.230 6L Flg


.280 4L Pill


.400 8L Flg


TO-39


.280 4L Stud


.500 6L Flg

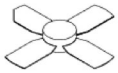
Military Communications

PART NUMBER	FREQ. Nom. MHz	P_{OUT} Min. Watts	P_G Min. dB	V_{CC} Volts	$?_C$ Typ. %	C_{OB} Max. pF	$?_{JC}$ Max. °C/W	PACKAGE STYLE
UML1	400	1.0	13.0	28.0	60	5	20.0	.280 4L Stud
UML1SL	400	1.0	13.0	28.0	60	5	20.0	.280 4L Pill
UML1T	400	1.0	10.0	28.0	55	5	35.0	TO-39
UML3	400	3.0	12.0	28.0	60	6	16.0	.280 4L Stud
UML5	400	5.0	10.0	28.0	60	10	11.0	.280 4L Stud
UML10	400	10	10.0	28.0	60	15	8.0	.280 4L Stud

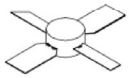
PULSED AVIONICS

At ASI, we offer a broad variety of products specifically characterized for Avionics applications.

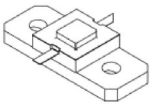
.250 2L Flg (B)



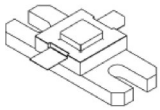
.280 4L Pill



.280 4L Pill (A)



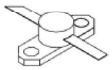
.400 2NL Flg



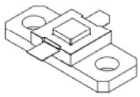
.400 2L Flg (A)

1025 – 1150 MHz, DME/TACAN Applications

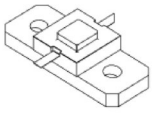
PART NUMBER	P_{OUT} Min. Watts	P_G Min. dB	Pulse Width ∝S	Duty Cycle %	V_{CC} Volts	?C Min. %	?JC Max. °C/W	PACKAGE STYLE
AVD0.5P[1]	0.5	10.0	CW	CW	12.5	NA	35.0	.280 4L Pill
AVD002F	2.0	9.0	10	1	35.0	35	10.0	.250 2L Flg (B)
AVD002P	2.0	9.0	10	1	35.0	35	10.0	.280 4L Pill (A)
AVD004F	4.0	9.0	10	1	28.0	35	5.0	.250 2L Flg (B)
AVD004P	4.0	9.0	10	1	28.0	35	5.0	.280 4L Pill (A)
AVD015F	15	10.0	10	1	50.0	35	2.0	.250 2L Flg (B)
AVD015P	15	10.0	10	1	50.0	35	2.0	.280 4L Pill (A)
AVD035F	35	10.0	10	1	50.0	35	1.0	.250 2L Flg (B)



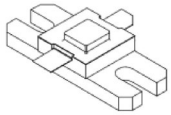
.250 2L Flg (B)



.310 2L Flg



.400 2NL Flg



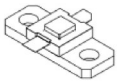
.400 2L Flg (A)

1030 – 1090 MHz, IFF Applications

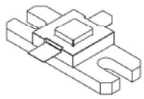
PART NUMBER	P_{OUT} Min. Watts	P_G Min. dB	Pulse Width ∝S	Duty Cycle %	V_{CC} Volts	?C Min. %	?JC Max. °C/W	PACKAGE STYLE
AVF100	100	10.0	10	1	40.0	35	35.0	.250 2L Flg (B)
AVF150	150	8.5	10	1	43.0	40	0.6	.250 2L Flg (B)
AVF250	250	8.5	10	1	50.0	35	0.6	.400 2NL Flg
AVF300	300	7.7	10	1	50.0	40	0.3	.400 2NL Flg
AVF350	350	6.2	10	1	50.0	40	0.2	.400 2NL Flg
AVF400	400	6.7	10	1	50.0	35	0.17	.400 2NL Flg
AVF450	450	6.5	10	1	50.0	40	0.12	.400 2L Flg (A)
AVF600	600	5.6	10	1	50.0	35	0.06	.400 2L Flg (A)

PULSED RADAR

At ASI, we offer a complete line of short, medium and long pulse transistors for civil and military radar applications.

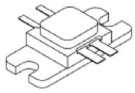


.310 2L Flg



.400 2L Flg (A)

.400 2L Flg



.400 Bal Flg (A)

400 – 500 MHz, UHF Radar

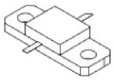
PART NUMBER	P_{OUT} Min. Watts	P_G Min. dB	Pulse Width µS	Duty Cycle %	V_{CC} Volts	η_C Min. %	θ_{JC} Max. °C/W	PACKAGE STYLE
AUR300	300	9.5	250	10	40.0	55	0.20	.400 Bal Flg (A)
AUR500	500	9.5	250	10	40.0	50	0.15	.400 Bal Flg (A)

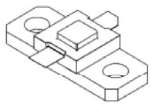
All transistors are configured common base; feature internal input matching networks and operate Class C.

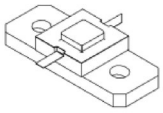
1200 – 1400 MHz, L-Band

PART	P_{OUT} Min.	P_G Min.	Pulse Width	Duty Cycle	V_{CC}	η_C Min.	θ_{JC} Max.	PACKAGE


.250 2L Flg

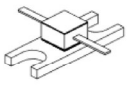

.250 2L Flg (A)

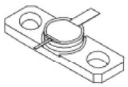

.310 2L Flg

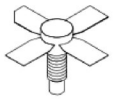

.400 2NL Flg

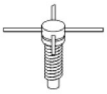
Common Base, Class C

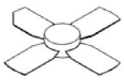
PART NUMBER	FREQ. GHz	P_{OUT} Min. Watts	P_G Min. dB	V_{CC} Volts	$?_C$ Min. %	C_{OB} Max. pF	$?_{JC}$ Max. °C/W	PACKAGE STYLE
ASI1001	1.0	1.0	12.0	28	50	3.2	45	.250 2L Flg
ASI1002	1.0	2.0	12.0	28	50	3.2	25	.250 2L Flg
ASI1005	1.0	5.0	12.0	28	50	6.5	15	.250 2L Flg
ASI1010	1.0	10	12.0	28	50	10.0	8.5	.250 2L Flg
ASI1020	1.0	20	10.0	28	50	19.0	5.0	.250 2L Flg
ASAT10*	1.5-1.7	10	11.0	28	45	7.0	6.0	.250 2L Flg (A)
ASAT15*	1.5-1.7	15	9.2	28	45	12.0	4.7	.250 2L Flg (A)
ASAT20*	1.5-1.7	20	9.2	28	45	20.0	4.0	.250 2L Flg (A)
ASAT25**	1.5-1.7	25	9.0	28	50	na	3.5	.250 2L Flg (A)
ASAT30**	1.5-1.7	30	9.0	28	50	na	3.5	.250 2L Flg (A)
ASI2001	2.0	1.0	10.0	28	35	2.5	25	.250 2L Flg
ASI2003	2.0	3.0	10.0	28	35	3.5	15	.250 2L Flg


.138 2L Flg


.250 2L Flg


.280 4L Stud


.205 4L Stud


.280 4L Pill


TO-46

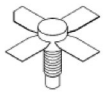
Common Emitter, Class A Linear

PART NUMBER	FREQ. Nom. GHz	P_{OUT} Min. Watts	P_G Min. dB	BIAS V_{CE} Volts	BIAS I_{CQ} mA	C_{OB} Max. pF	$?_{JC}$ Max. °C/W	PACKAGE STYLE
MLN1027F	1.0	0.5	12.0	20.0	100	3.5	25	.250 2L Flg
MLN1027SS	1.0	0.5	11.0	20.0	100	3.5	25	.205 4L Stud
MLN1027S	1.0	0.5	9.0	20.0	100	3.5	25	.280 4L Stud
MLN1027SL	1.0	0.5	9.0	20.0	100	3.5	25	.280 4L Pill
MLN1030F	1.0	1.0	12.0	20.0	150	5.0	20	.250 2L Flg
MLN1030SS	1.0	1.0	10.0	20.0	150	5.0	20	.205 4L Stud
MLN1030S	1.0	1.0	9.0	20.0	150	5.0	20	.280 4L Stud
MLN1030SL	1.0	1.0	9.0	20.0	150	5.0	20	.280 4L Pill
MLN1033F	1.0	2.0	12.0	18.0	220	5.5	17	.250 2L Flg
MLN1033S	1.0	2.0	9.0	18.0	220	5.5	17	.280 4L Stud
MLN1037F	1.0	5.0	10.0	20.0	800	15.0	5.5	.250 2L Flg
MLN1037S	1.0	5.0	8.0	20.0	800	15.0	5.5	.280 4L Stud

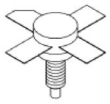
RF Power Transistor

BROADCAST

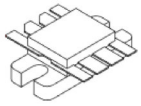
ASI TV/Linear transistors are specifically designed for television broadcast transmitters requiring ultra high linearity.



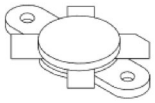
.280 4L Stud



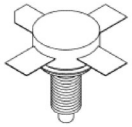
.380 4L Stud



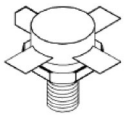
.400 8L Flg



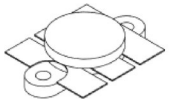
.500 4L Flg



.500 4L Stud



.500 4L Stud (A)



.500 6L Flg

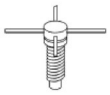
108 MHz, Class C, FM Broadcast

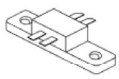
PART NUMBER	FREQ. Nom. MHz	P_{OUT} Min. Watts	P_G Min. dB	V_{CC} Volts	η_C Typ. %	C_{OB} Typ. pF	θ_{JC} Max. °C/W	PACKAGE STYLE
FMB075	108	75	10.0	28	65	75	1.5	.500 4L Flg
FMB150	108	150	9.0	28	65	140	1.1	.500 4L Flg
FMB175	108	175	10.0	28	65	200	0.7	.500 6L Flg

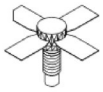
All transistors are configured common emitter and are operated Class C.

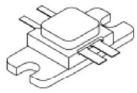
Television Band III

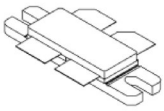
	FREQ.	P_{OUT}	P_G	BIAS	IMD[1]	θ_{JC}	

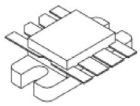

.205 4L Stud

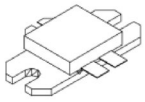

.250 Bal Flg

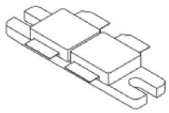

.280 4L Stud


.400 Bal Flg (A)


.400 Bal Flg (C)


.400 8L Flg


.450 Bal Flg (A)


.450 4L Flg (B)

Television Band IV & V

PART NUMBER	FREQ. Nom. MHz	P_{OUT} Watts (PK Sync)	P_G Min. dB	BIAS V_{CE} Volts	BIAS I_C MA	IMD[1] Min. dBc	θ_{JC} Max. °C/W	PACKAGE STYLE
TVU 0.5	860	0.5	10.0	20.0	220	-58	22.0	.280 4L Stud
TVU 0.5A	860	0.5	9.5	20.0	150	-58	33.0	.205 4L Stud
TVU 0.5B	860	0.5	12.0	20.0	150	-58	33.0	.205 4L Stud
TVU 001	860	1.0	10.0	20.0	440	-60	9.0	.280 4L Stud
TVU 002	860	2.0	10.0	25.0	410	-60	10.0	.280 4L Stud
TVU 004	860	4.0	8.5	25.0	850	-60	7.0	.280 4L Stud
TVU 012	860	12	9.0	26.5	2 x 0.85	-52	1.6	.400 8L Flg
TVU 014	860	14	8.5	25.0	2 x 850	-50	2.5	.250 Bal Flg