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UHF linear push-pull power transistor BLV58

FEATURES

- High power gain
- Double stage internal input matching for high input impedance
- Diffused emitter-ballasting resistors enhances ruggedness
- Gold metallization for high reliability.

DESCRIPTION

The BLV58 is a common emitter epitaxial npn silicon planar transistor designed for high linearity class-A operation in UHF (bands 4 and 5) TV transmitters and transposers.

The device is incorporated in a push-pull SOT289 flange envelope with a ceramic cap, which is utilized with the emitters connected to the flange.

PINNING - SOT289

PIN	DESCRIPTION
1	collector 1
2	collector 2
3	base 1
4	base 2
5	emitter

QUICK REFERENCE DATA

RF performance at T_h = 25 °C in a common emitter test circuit.

MODE OF OPERATION	f_{vision} (MHz)	V_{CE} (V)	I_{CQ} (A)	$P_{o\ sync}$ (W)	G_p (dB)	d_{im} (dB) (note 1)
c.w. class-A	860	25	2 × 1.6	25	>10	< −45

Note

1. Three-tone test method (vision carrier −8 dB, sound carrier −7 dB, sideband signal −16 dB); zero dB corresponds to peak sync level.

PIN CONFIGURATION

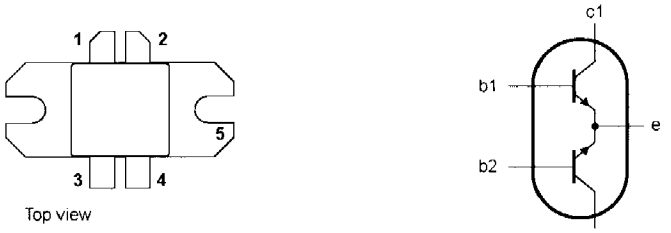


Fig.1 Simplified outline and symbol.

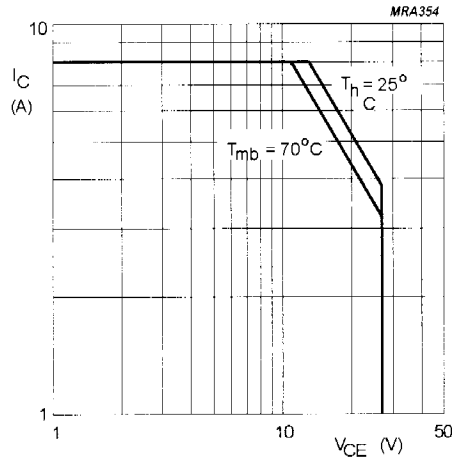
LIMITING VALUES (per transistor section unless otherwise specified)

In accordance with the Absolute Maximum System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	50	V
V_{CEO}	collector-emitter voltage	open base	–	27	V
V_{EBO}	emitter-base voltage	open collector	–	3.5	V
I_C, $I_{C(AV)}$	collector current	DC or average value	–	4	A
I_{CM}	collector current	peak value; f > 1 MHz	–	8	A
P_{tot}	total power dissipation	DC operation; T_{mb} = 70 °C (note 1)	–	87	W
T_{stg}	storage temperature range		−65	150	°C
T_j	junction operating temperature		–	200	°C

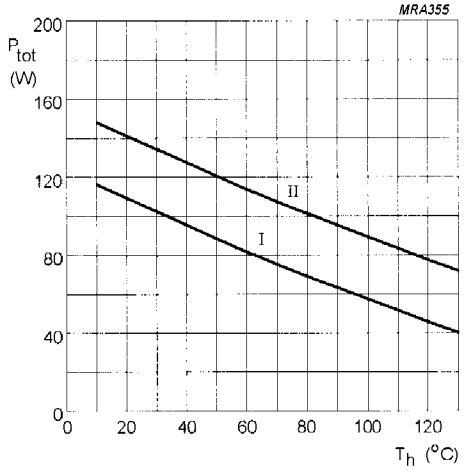
Note

1. Total device, both sections equally loaded.



Total device, both sections equally loaded.

Fig.2 DC SOAR.



(I) Continuous DC operation.
(II) Short time operation during mismatch.
Total device, both sections equally loaded.

Fig.3 Power derating curve.

THERMAL RESISTANCE

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
$R_{th\ j\text{-}mb(DC)}$	from junction to mounting base	P_{dis} = 87 W; T_{mb} = 70 °C (note 1)	1.5	K/W
$R_{th\ mb\text{-}h}$	from mounting base to heatsink	note 1	0.2	K/W

Note

1. Total device, both sections equally loaded.

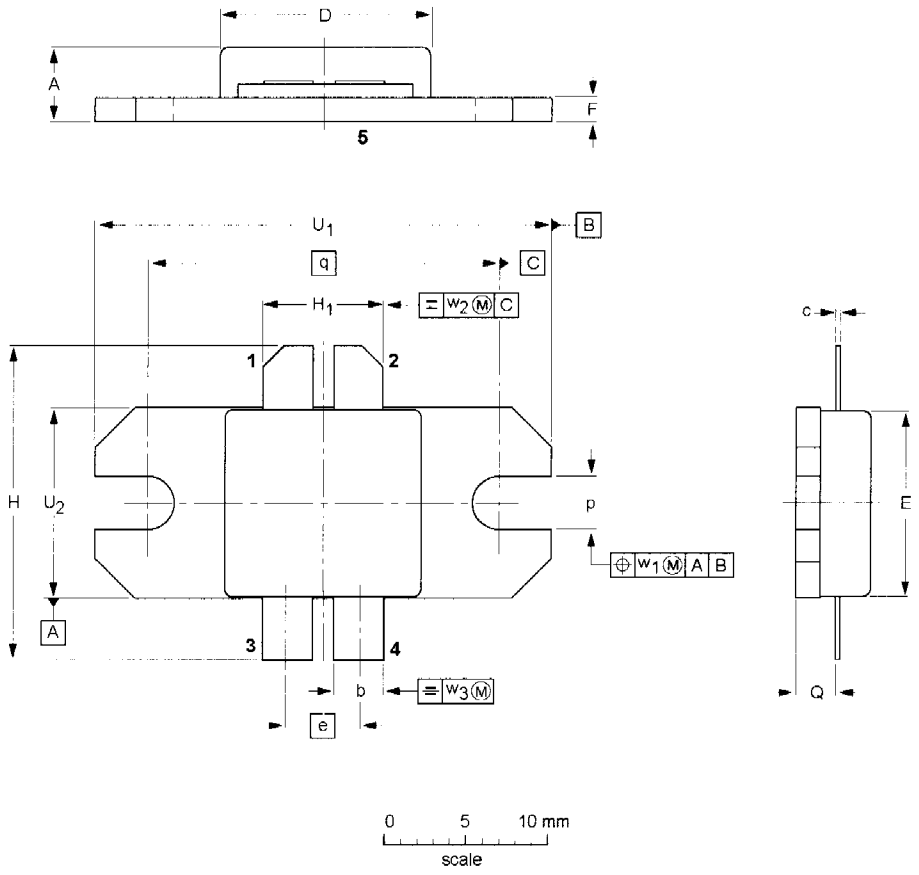
CHARACTERISTICS

Values apply to either transistor section; T_j = 25 °C.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_{(BR)CBO}$	collector-base breakdown voltage	open emitter; I_C = 20 mA	50	–	–	V
$V_{(BR)CEO}$	collector-emitter breakdown voltage	open base; I_C = 50 mA	27	–	–	V
$V_{(BR)EBO}$	emitter-base breakdown voltage	open collector; I_E = 10 mA	3.5	–	–	V
I_{CES}	collector-emitter leakage current	V_{BE} = 0; V_{CE} = 27 V	–	–	10	mA
h_{FE}	DC current gain	V_{CE} = 25 V; I_C = 1.6 A	30	–	–	
C_c	collector capacitance	V_{CB} = 25 V; $I_E = I_e$ = 0; f = 1 MHz	–	36	45	pF

PACKAGE OUTLINE

Flanged ceramic package; 2 mounting holes; 4 leads **SOT289A**



DIMENSIONS (millimetre dimensions are derived from the original inch dimensions)

UNIT	A	b	c	D	E	e	F	H	H_1	p	Q	q	U_1	U_2	w_1	w_2	w_3
mm	4.65 3.92	3.33 3.07	0.10 0.05	13.10 12.90	11.53 11.33	4.60	1.65 1.40	19.81 19.05	4.85 4.34	3.43 3.17	2.31 2.06	21.44	28.07 27.81	11.81 11.56	0.51	1.02	0.25
inches	0.183 0.154	0.131 0.121	0.004 0.002	0.516 0.508	0.454 0.446	0.181	0.065 0.055	0.780 0.750	0.191 0.171	0.135 0.125	0.091 0.081	0.844	1.105 1.095	0.465 0.455	0.02	0.04	0.01

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT289A						97-06-28