

## SILICON MICROWAVE POWER TRANSISTOR

### PRODUCT DATA SHEET



#### FEATURES:

- High Output Power  
30.0 dBm,  $P_{1dB}$  @ 1 GHz
- High Gain Bandwidth Product  
 $f_t = 6.0$  GHz @  $I_C = 200$  mA
- High Gain  
 $|S_{21}|^2 = 12.0$  dB @ 1.0 GHz
- Stud Mount packaging available

#### PERFORMANCE DATA:

- Electrical Characteristics ( $T_A = 25^\circ\text{C}$ )

#### DESCRIPTION AND APPLICATIONS:

Bipolarics' BPT1E1 is a high performance silicon bipolar transistor intended for medium power applications at VHF and UHF frequencies to 1.0 GHz. Typical applications include wide band oscillators and amplifiers in CATV, aeronautical, maritime and personal communication applications. The BPT1E1 is bonded common emitter for linear applications. Linear output power of 1 watt can be achieved. By driving part type BPT1E5, higher output power can be achieved. Stud Mount packaging makes this device excellent for industrial and military products. Uniformity and reliability are assured by the use of ion implanted junctions, ion implanted ballast resistors and gold metallization.

#### Absolute Maximum Ratings:

SYMBOL	PARAMETERS	RATING	UNITS
$V_{CBO}$	Collector-Base Voltage @ 100 $\mu$ A	40	V
$V_{CEO}$	Collector-Emitter Voltage @ 100 $\mu$ A	20	V
$V_{EBO}$	Emitter-Base Voltage @ 10 $\mu$ A	3.0	V
$I_C$	Collector Current (instantaneous)	320	mA
$T_J$ (1)	Junction Temperature	200	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-65 to 150	$^\circ\text{C}$

(1) Depends on package

SYMBOL	PARAMETERS & CONDITIONS $V_{CE} = 15\text{V}, I_C = 200$ mA, Class A, unless stated	UNIT	MIN.	TYP.	MAX.
$P_{1dB}$	Power output at 1 dB compression: $f = 1.0$ GHz	dBm		30.0	
$G_{1dB}$	Gain at 1dB compression: $f = 1.0$ GHz	dB		12.0	
$\eta$	Collector Efficiency Class A	%		30	
$C_{CB}$	Collector Base Capacitance: $f = 1$ MHz, $I_E = 0$	pF	1.3	2.0	
$h_{FE}$	Forward Current Transfer Ratio: $V_{CE} = 8\text{V}, I_C = 100$ mA		20	60	100
$P_T$	Total Power Dissipation ( $T_C = 25^\circ\text{C}$ )	W		3	