

## SILICON MICROWAVE POWER TRANSISTOR

### PRODUCT DATA SHEET

#### FEATURES:

- High Output Power  
5 W @ 1 GHz
- High Gain Bandwidth Product  
 $f_t = 6.0 \text{ GHz @ } I_C = 1.0 \text{ A}$
- High Gain  
 $|S_{21}|^2 = 11.0 \text{ dB @ } 1.0 \text{ GHz}$
- Stud Mount package (Package 28S)



#### DESCRIPTION AND APPLICATIONS:

Bipolarics' BPT30V1E5 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 BPT30V1E5 is bonded common emitter for linear applications. Linear output power of 5 watt 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.

#### PERFORMANCE DATA:

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

#### Absolute Maximum Ratings:

SYMBOL	PARAMETERS	RATING	UNITS
$V_{CB0}$	Collector-Base Voltage	60	V
$V_{CEO}$	Collector-Emitter Voltage	30	V
$V_{EBO}$	Emitter-Base Voltage	3.0	V
$I_C$	Collector Current (instantaneous)	1.5	A
$T_J$	Junction Temperature	200	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-65 to 150	$^\circ\text{C}$

$\theta_{JC}$	Thermal Resistance	8.5	C/W
---------------	--------------------	-----	-----

SYMBOL	PARAMETERS & CONDITIONS $V_{CE} = 15\text{V}, I_C = 1.0 \text{ A}, \text{Class A, unless stated}$	UNIT	MIN.	TYP.	MAX.
$P_{1dB}$	Power output at 1 dB compression: $f = 1.0 \text{ GHz}$	W		5.0	
$G_{1dB}$	Gain at 1dB compression: $f = 1.0 \text{ GHz}$	dB		11.0	
$\eta$	Collector Efficiency Class A	%		30	
$C_{CB}$	Collector Base Capacitance: $f = 1 \text{ MHz}, I_E = 0$	pF		10.0	
$h_{FE}$	Forward Current Transfer Ratio: $V_{CE} = 8\text{V}, I_C = 500 \text{ A}$		20	60	100
$P_T$	Total Power Dissipation ( $T_C = 25^\circ\text{C}$ )	W		15	