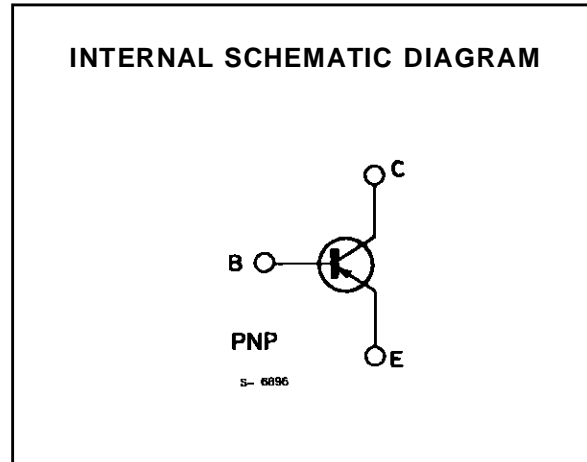
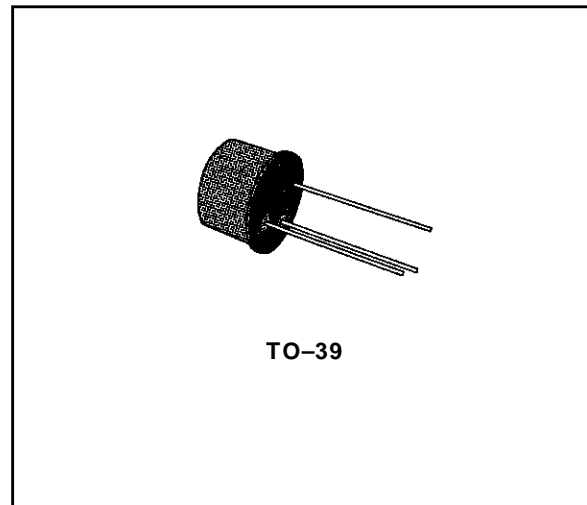


MEDIUM POWER AMPLIFIERS

DESCRIPTION

The BSV15 and BSV16 are silicon planar epitaxial PNP transistors in Jedec TO-39 metal case, intended for use in medium power general industrial applications.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		BSV15	BSV16	
V_{CES}	Collector-emitter Voltage ($V_{BE} = 0$)	- 40	- 60	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	- 40	- 60	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	- 5		V
I_C	Collector Current	- 1		A
I_B	Base Current	- 0.2		A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25$ °C	5		W
T_{stg}, T_j	Storage and Junction Temperature	- 65 to 200		°C

BSV15-BSV16

THERMAL DATA

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	35	°C/W
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	200	°C/W

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\ ^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cutoff Current ($V_{BE} = 0$)	for BSV 15 $V_{CE} = -40\ \text{V}$ $V_{CE} = -40\ \text{V}$ $T_{amb} = 150\ ^\circ\text{C}$ for BSV 16 $V_{CE} = -60\ \text{V}$ $V_{CE} = -60\ \text{V}$ $T_{amb} = 150\ ^\circ\text{C}$			- 0.1 - 50	μA μA
I_{CEX}	Collector Cutoff Current ($V_{BE} = 0.2\ \text{V}$)	for BSV 15 $V_{CE} = -40\ \text{V}$ $T_{amb} = 100\ ^\circ\text{C}$ for BSV 16 $V_{CE} = -60\ \text{V}$ $T_{amb} = 100\ ^\circ\text{C}$			- 50 - 50	μA μA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = -4\ \text{V}$			- 50	nA
$V_{(BR)\ CES}$	Collector-emitter Breakdown Voltage ($V_{BE} = 0$)	$I_C = -10\ \mu\text{A}$ for BSV 15 for BSV 16	- 40 - 60			V V
$V_{CEO(sus)}^*$	Collector-emitter Sustaining Voltage ($I_B = 0$)	$I_C = -10\ \text{mA}$ for BSV 15 for BSV 16	- 40 - 60			V V
$V_{(BR)\ EBO}$	Emitter-base Breakdown Voltage ($I_C = 0$)	$I_E = -10\ \mu\text{A}$	- 5			V
$V_{CE(sat)}$	Collector-emitter Saturation Voltage	$I_C = -500\ \text{mA}$ $I_B = -25\ \text{mA}$	- 0.25		- 1	V
V_{BE}	Base-emitter Voltage	$I_C = -100\ \text{mA}$ $V_{CE} = -1\ \text{V}$ $I_C = -500\ \text{mA}$ $V_{CE} = -1\ \text{V}$	- 0.7	- 0.85	- 1 - 1.4	V V
h_{FE}	DC Current Gain	$I_C = -0.1\ \text{mA}$ $V_{CE} = -1\ \text{V}$ Gr. 6 Gr. 10 Gr. 16 $I_C = -100\ \text{mA}$ $V_{CE} = -1\ \text{V}$ Gr. 6 Gr. 10 Gr. 16	15 20 30 40 63 100	44 75 120 63 100 160	100 160 250	

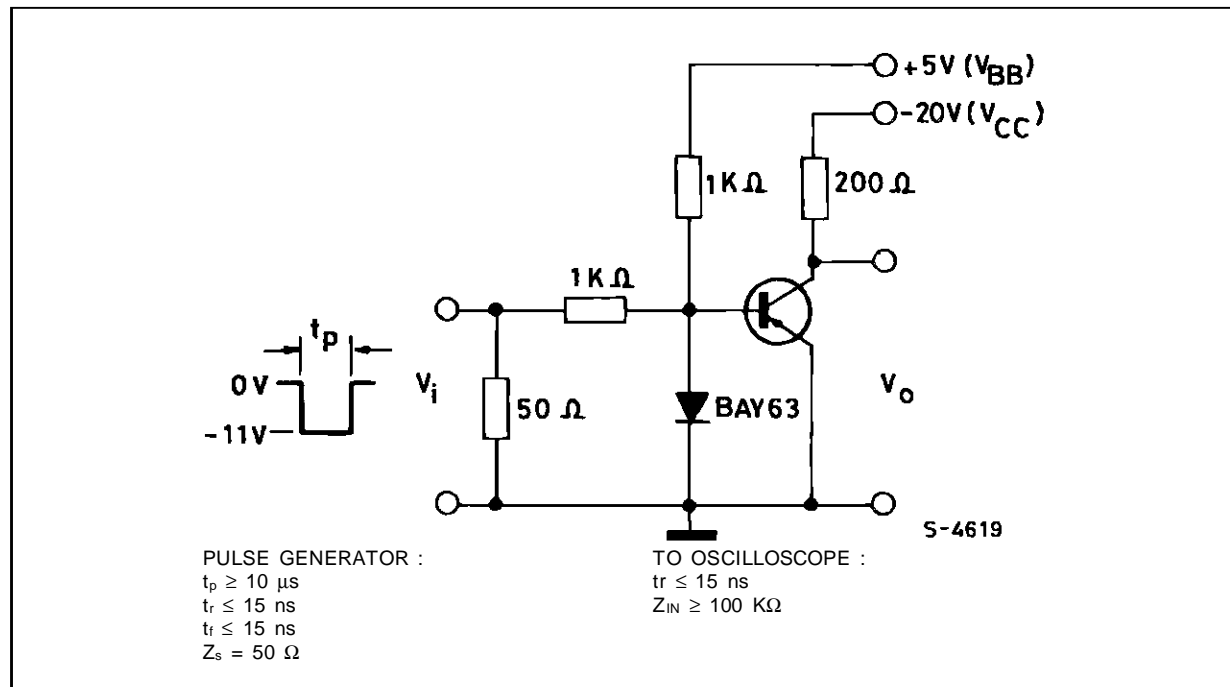
* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.

ELECTRICAL CHARACTERISTICS(continued)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
h_{FE}	DC Current Gain	$I_C = -500 \text{ mA}$ $V_{CE} = -1 \text{ V}$ Gr. 6 Gr. 10 Gr. 16	20 25 35	40 55 85		
h_{fe}	Small Signal Current Gain	$I_C = -1 \text{ mA}$ $V_{CE} = -5 \text{ V}$ $f = 1 \text{ KHz}$	20			
f_T	Transition Frequency	$I_C = -50 \text{ mA}$ $V_{CE} = -1 \text{ V}$ $f = 20 \text{ MHz}$	50			MHz
C_{EBO}	Emitter-base Capacitance	$I_C = 0$ $V_{EB} = -0.5 \text{ V}$ $f = 1 \text{ MHz}$		180		pF
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $V_{CB} = -10 \text{ V}$ $f = 1 \text{ MHz}$		20	30	pF
t_s^{**}	Storage Time	$I_C = -100 \text{ mA}$ $V_{CC} = -20 \text{ V}$ $I_{B1} = -I_{B2} = -5 \text{ mA}$			500	ns
t_f^{**}	Fall Time	$I_C = -100 \text{ mA}$ $V_{CC} = -20 \text{ V}$ $I_{B1} = -I_{B2} = -5 \text{ mA}$			150	ns
t_{on}^{**}	Turn-on Time	$I_C = -100 \text{ mA}$ $V_{CC} = -20 \text{ V}$ $I_{B1} = -5 \text{ mA}$			500	ns

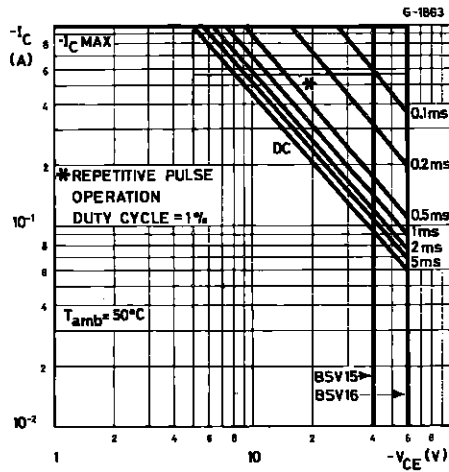
** See test circuit.

Test Circuit for t_s , t_f and t_{on} .

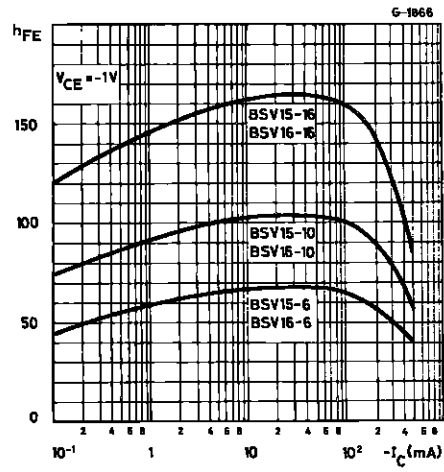


BSV15-BSV16

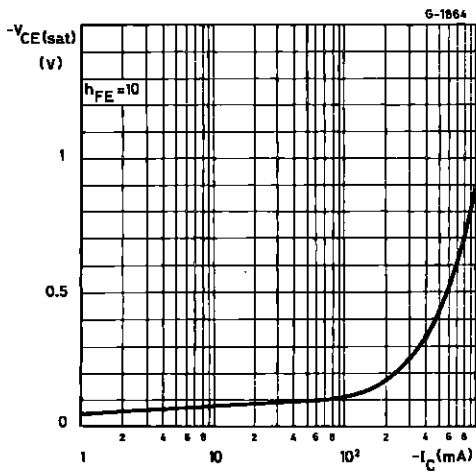
Safe Operating Areas.



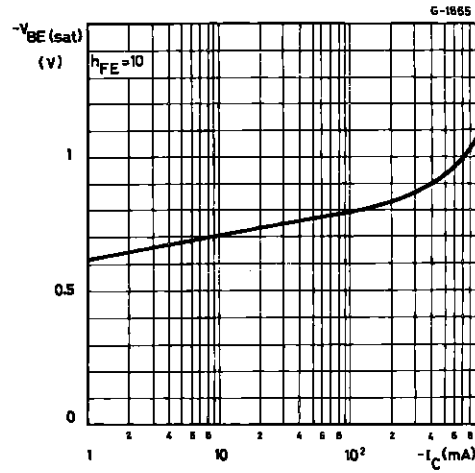
DC Current Gain.



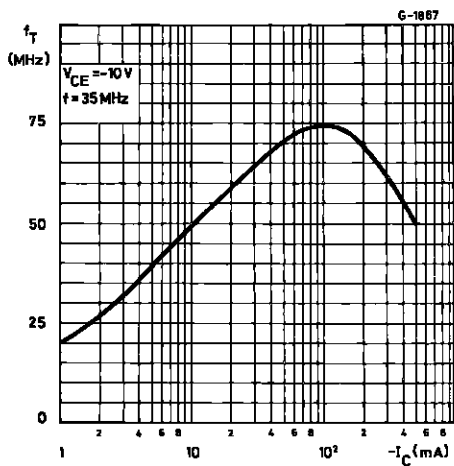
Collector-emitter Saturation Voltage.



Base-emitter Saturation Voltage.

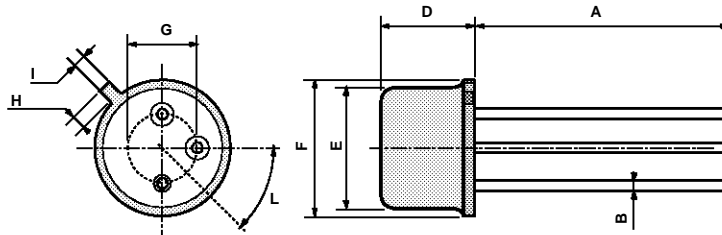


Transition Frequency.



TO39 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45° (typ.)					



P008B

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