Features

- Ideally Suited for Automatic Insertion
- Copper Lead Frame with Better Heat Dissipation
- For Switching and AF Amplifier Applications
- Epitaxial Planar Die Construction
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

NPN Small Signal Transistor

Maximum Ratings @ 25°C Unless Otherwise Specified

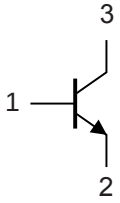
- Operating Junction Temperature Range: -55℃ to +150℃
- Storage Temperature Range: -55℃ to +150℃
- Thermal Resistance: 250℃/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	8	V
Continuous Collector Current	I_C	500	mA
Peak Collector Current	I_{CM}	1000	mA
Power Dissipation(Note 1)	P_D	500	mW

Note 1.Device Mounted on Ceramic Substrate 0.7mm X 2.5cm^2 area.

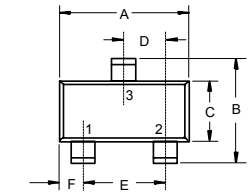
Marking: 6B

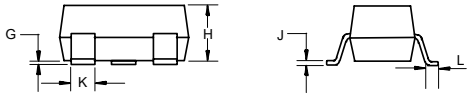
Internal Structure



1.BASE
2.EMITTER
3.COLLECTOR

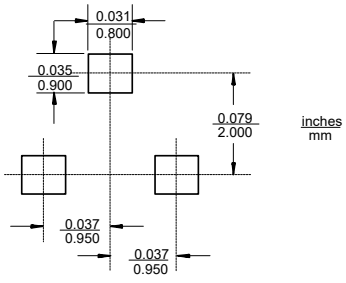
SOT-23





DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	

Suggested Solder Pad Layout



Electrical Characteristics @ T_A=25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50			V	I_C=10μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	45			V	I_C=10mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	8			V	I_E=10μA, I_C=0
Collector-Base Cutoff Current	I_{CBO}			0.1	μA	V_{CB}=45V, I_E=0
Emitter-Base Cutoff Current	I_{EBO}			0.1	μA	V_{EB}=4V, I_C=0
DC Current Gain	$h_{FE(1)}$	160		400		V_{CE}=1V, I_C=100mA
	$h_{FE(2)}$	40				V_{CE}=1V, I_C=500mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.7	V	I_C=500mA, I_B=50mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			1.2	V	I_C=500mA, I_B=50mA
Base-Emitter Voltage	V_{BE}			1.2	V	V_{CE}=1V, I_C=300mA
Transition Frequency	f_T	100			MHz	I_C=10mA, V_{CE}=5V, f=100MHz
Collector Output Capacitance	C_{ob}		10		pF	V_{CB}=10V,I_E=0,f=1MHz

Curve Characteristics

Fig. 1 - Static Characteristics

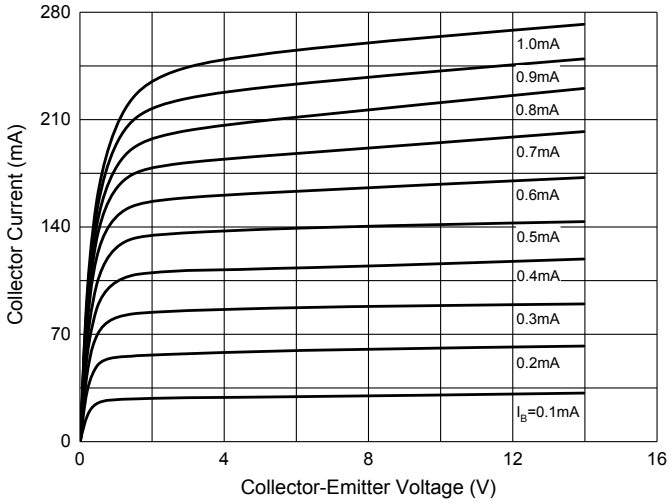


Fig. 2 - DC Current Gain Characteristics

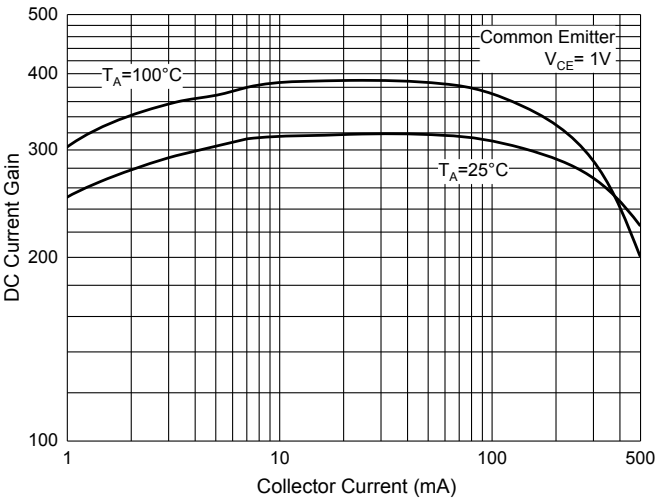


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

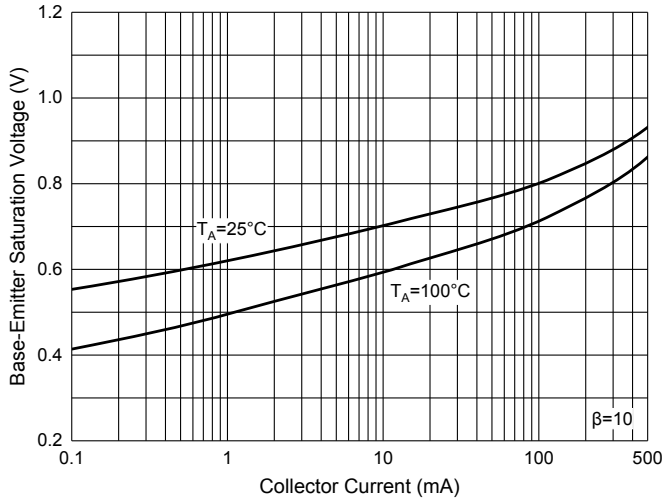


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

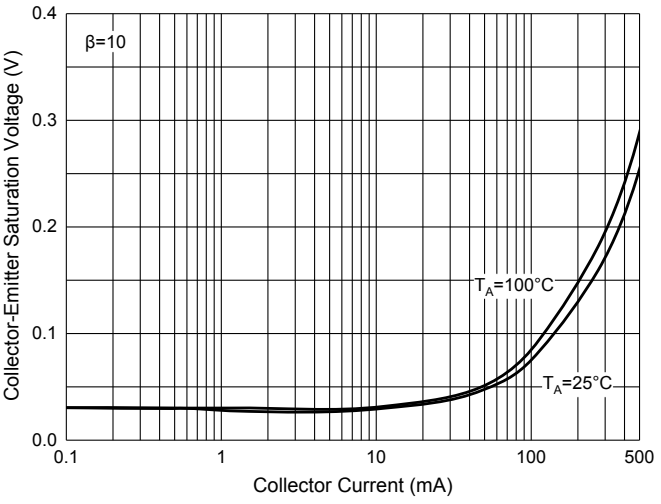


Fig. 5 - Base-Emitter Voltage Characteristics

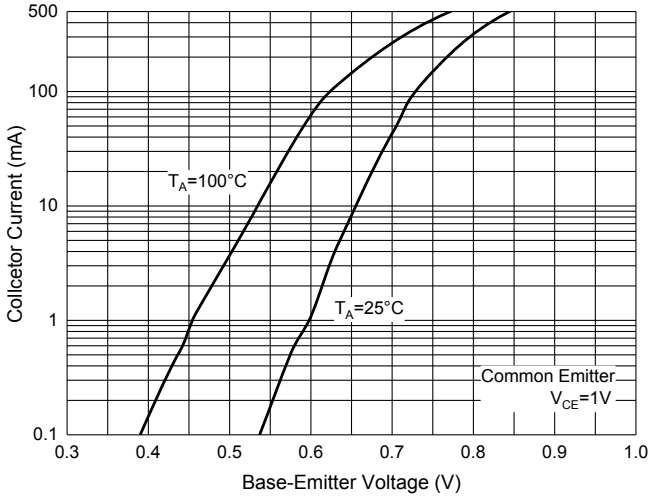
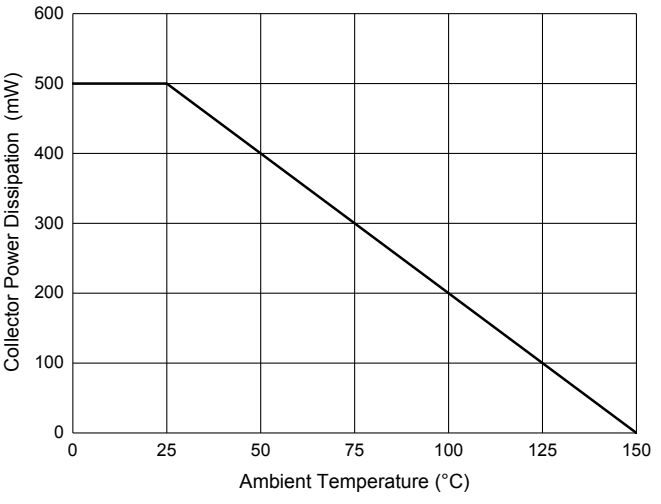


Fig. 6 - Collector Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-TP-HF