

Features

- 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)

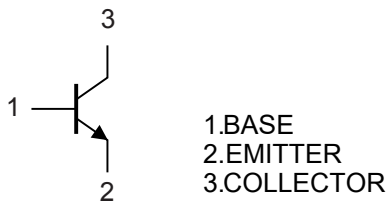
Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 625°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Continuous Collector Current	I_C	150	mA
Power Dissipation	P_D	200	mW

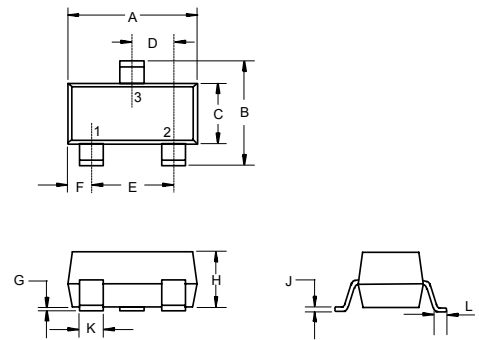
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Internal Structure



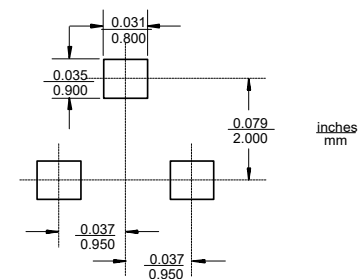
**NPN Silicon
Plastic-Encapsulate
Transistor**

SOT-23



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}	60			V	I _C =100μA, I _E =0
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	50			V	I _C =1mA, I _B =0
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	5			V	I _E =100μA, I _C =0
Collector-Base Cutoff Current	I _{CBO}			0.1	μA	V _{CB} =60V, I _E =0
Collector Cutoff Current	I _{CER}			0.1	μA	V _{CE} =55V, R=10MΩ
Emitter-Base Cutoff Current	I _{EBO}			0.1	μA	V _{EB} =5V, I _C =0
DC Current Gain	h _{FE(1)}	130		400		V _{CE} =6V, I _C =1mA
	h _{FE(2)}	40				V _{CE} =6V, I _C =0.1mA
Collector-Emitter Saturation Voltage	V _{CE(sat)}			0.3	V	I _C =100mA, I _B =10mA
Base-Emitter Saturation Voltage	V _{BE(sat)}			1.0	V	I _C =100mA, I _B =10mA
Transition Frequency	f _T	150			MHz	V _{CE} =6V, I _C =10mA, f=30MHz
Collector-Base Capacitance	C _{ob}			3	pF	V _{CB} =10V, I _E =0, f=1MHz

Classification of h_{FE(1)}

Rank	L	H
Range	130-200	200-400

Curve Characteristics

Fig. 1 - Static Characteristics

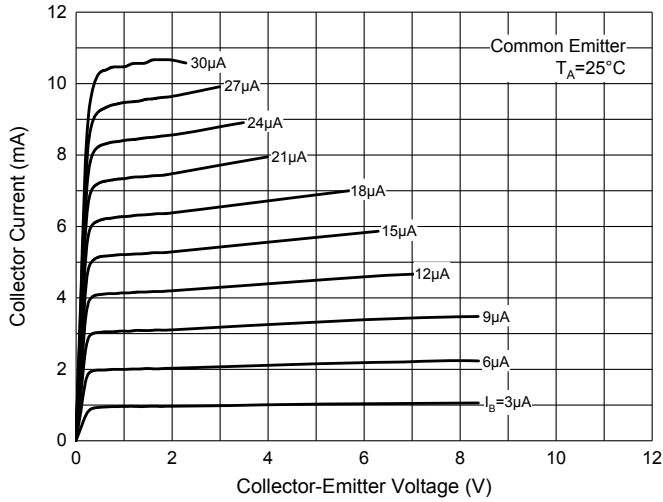


Fig. 2 - DC Current Gain Characteristics

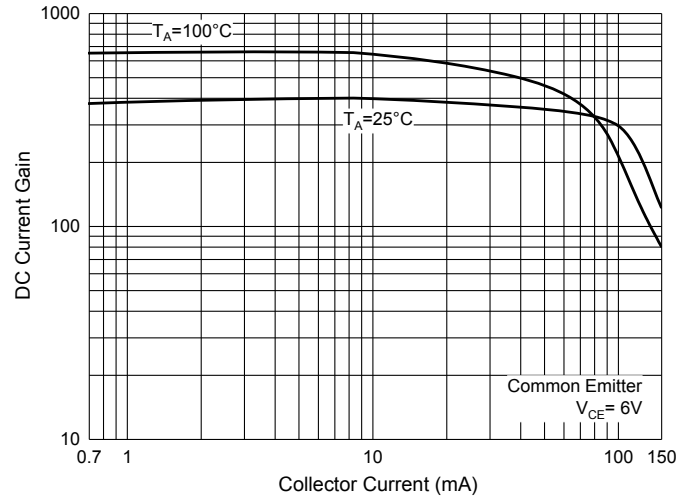


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

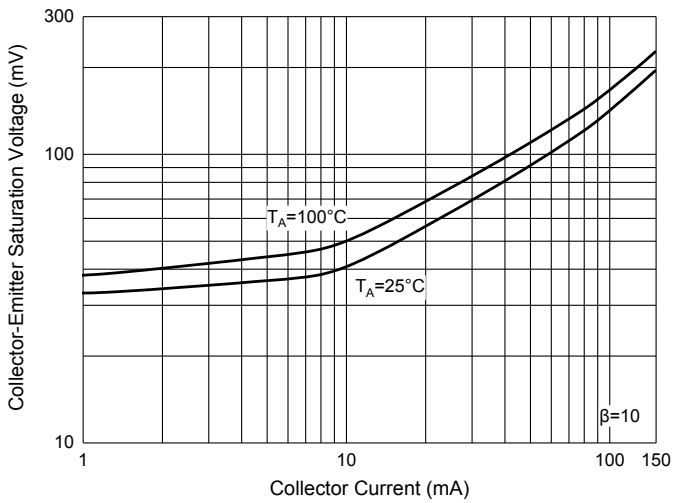


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

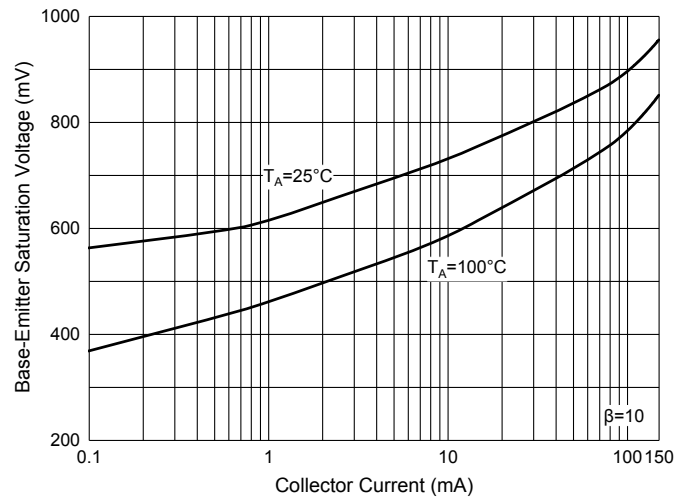
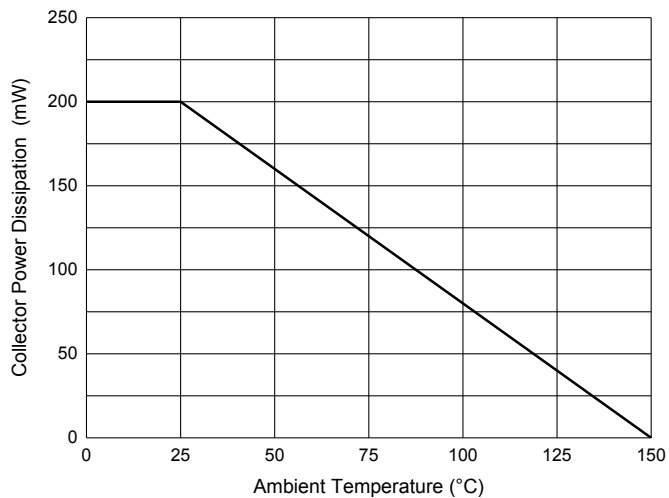


Fig. 5 - Collector Power Derating Curve



Ordering Information

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

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

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