

Features

- Medium Power Complementary Silicon Transistors
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings @ 25°C Unless Otherwise Specified

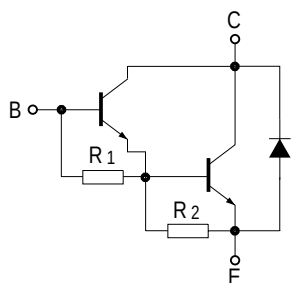
Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5	V
Continuous Collector Current	I_C	5	A
Power Dissipation @ $T_C=25^\circ\text{C}$	P_D	65	W
Power Dissipation @ $T_A=25^\circ\text{C}$	P_D	2	W

Thermal characteristics

Parameter	Symbol	Rating	Unit
Junction Temperature Range	T_J	-55~+150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~+150	$^\circ\text{C}$
Thermal Resistance from Junction to Ambient	$R_{th(J-A)}$	62.5	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case	$R_{th(J-C)}$	1.92	$^\circ\text{C/W}$

Note: 1.High Temperature Solder Exemption Applied, see EU Directive Annex 7.

Internal Structure



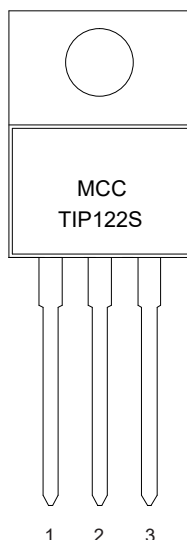
R_1 typ. =5 k Ω R_2 typ. =210 Ω

1.BASE

2.COLLECTOR

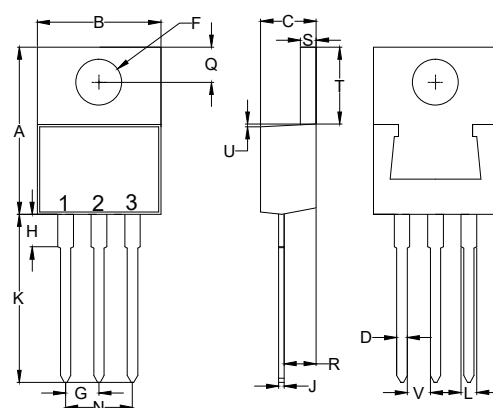
3.EMITTER

Marking Code



NPN Plastic-Encapsulate Transistors

TO-220



1.BASE
2.COLLECTOR
3.EMITTER

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.560	0.625	14.22	15.88	
B	0.380	0.420	9.65	10.67	
C	0.140	0.190	3.56	4.82	
D	0.020	0.045	0.51	1.14	
F	0.139	0.161	3.53	4.09	Φ
G	0.090	0.110	2.29	2.79	
H	-----	0.250	-----	6.35	
J	0.012	0.025	0.30	0.64	
K	0.500	0.580	12.70	14.73	
L	0.045	0.060	1.14	1.52	
N	0.190	0.210	4.83	5.33	
Q	0.100	0.135	2.54	3.43	
R	0.080	0.115	2.04	2.92	
S	0.045	0.055	1.14	1.39	
T	0.230	0.270	5.84	6.86	
U	-----	0.050	-----	1.27	
V	0.045	-----	1.15	-----	

Electrical Characteristics @ $T_A=25^\circ\text{C}$ Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	100			V	$I_C=1\text{mA}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	100			V	$I_C=10\text{mA}, I_B=0$
Collector Cutoff Current	I_{CBO}			0.2	mA	$V_{CB}=100\text{V}, I_E=0$
Collector Cutoff Current	I_{CEO}			0.5	mA	$V_{CE}=50\text{V}, I_B=0$
Emitter Cutoff Current	I_{EBO}			2.0	mA	$V_{EB}=5\text{V}, I_C=0$
DC Current Gain	$h_{FE(1)}$	1000				$V_{CE}=3\text{V}, I_C=0.5\text{A}$
	$h_{FE(2)}$	1000	12000			$V_{CE}=3\text{V}, I_C=3\text{A}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			2.0	V	$I_C=3\text{A}, I_B=12\text{mA}$
				4.0	V	$I_C=5\text{A}, I_B=20\text{mA}$
Base-Emitter On Voltage	V_{BE}			2.5	V	$V_{CE}=3\text{V}, I_C=3\text{A}$
Collector Output Capacitance	C_{ob}			200	pF	$V_{CB}=-10\text{V}, I_E=0, f=1\text{MHz}$

Curve Characteristics

Fig. 1 - Static Characteristics

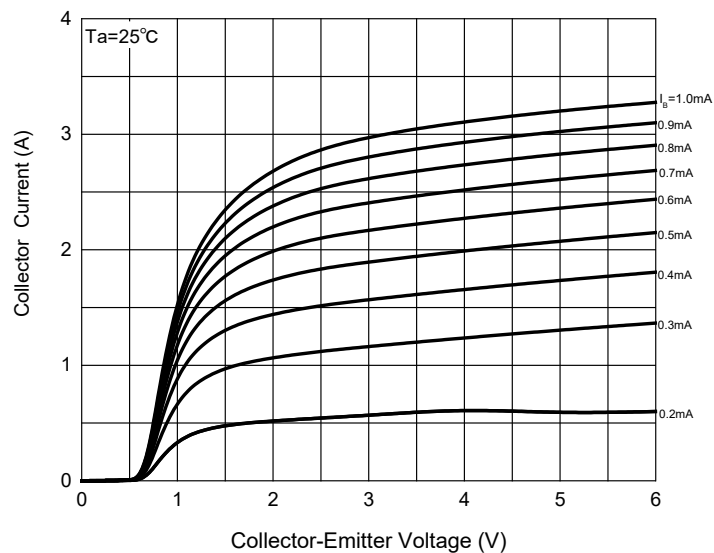


Fig. 2 - DC Current Gain Characteristics

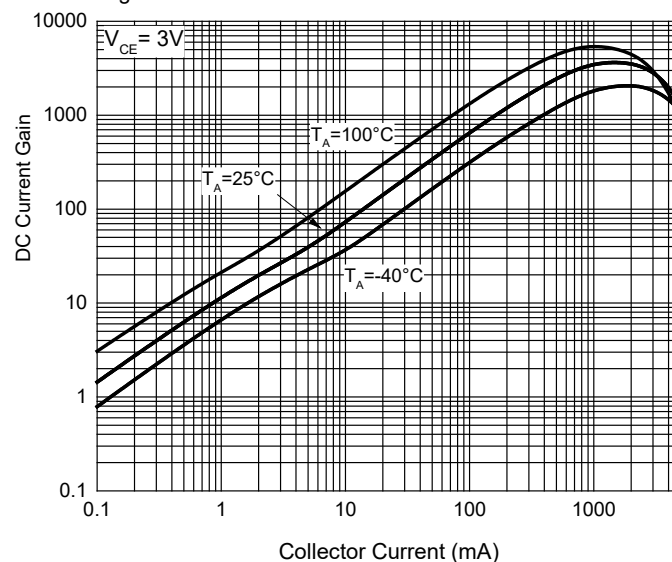


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

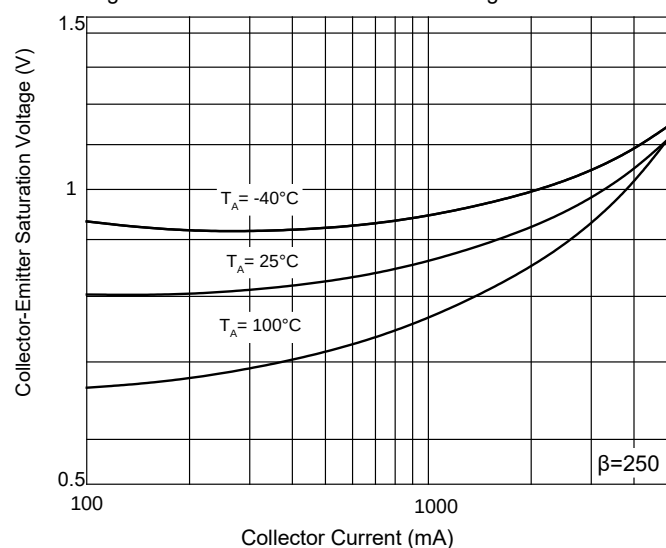


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

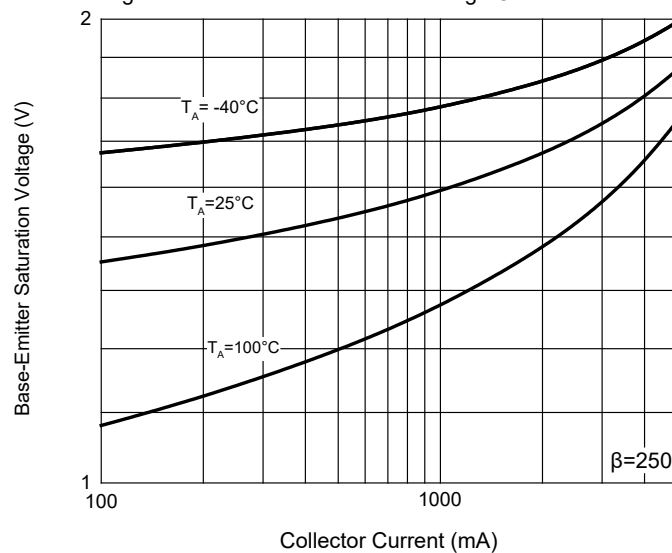


Fig. 5 - Base-Emitter Voltage Characteristics

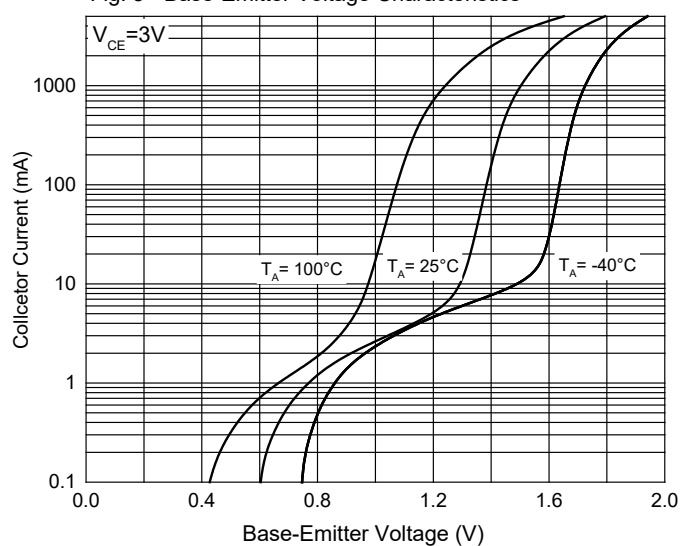
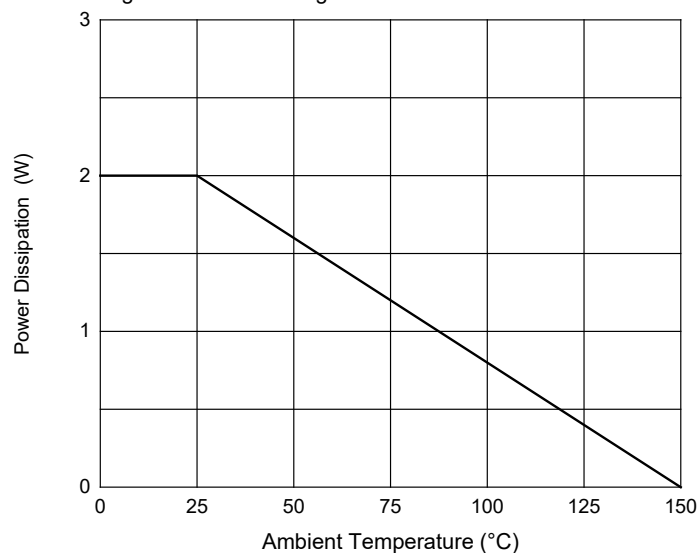


Fig. 6 - Power Derating Curve



Ordering Information

Device	Packing
Part Number-BP	Bulk:50pcs/Tube, 1Kpcs/Box, 5Kpcs/Carton

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