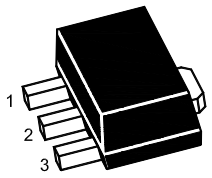
NPN Silicon Power Transistor

The transistor is subdivided into four groups, R, Q, P and E, according to its DC current gain.



1.Base 2.Collector 3.Emitter
SOT-89 Plastic Package

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector to Base Voltage	V_{CBO}	40	V
Collector to Emitter Voltage	V_{CEO}	30	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current	I_C	3	A
Peak Collector Current (t = 10 ms)	I_{CP}	7	A
Total power dissipation (T_a = 25 °C)	P_{tot}	1	W
Total power dissipation (T_c = 25 °C)	P_{tot}	10	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	- 55 to + 150	°C

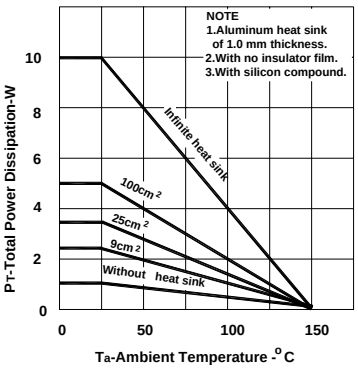
Characteristics at T_a = 25 °C

Parameter		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain						
at V_{CE} = 2 V, I_C = 20 mA		h_{FE}	30	-	-	-
at V_{CE} = 2 V, I_C = 1 A Current Gain Group	R	h_{FE}	60	-	120	-
	Q	h_{FE}	100	-	200	-
	P	h_{FE}	160	-	320	-
	E	h_{FE}	200	-	400	-
Collector Base Cutoff Current at V_{CB} = 30 V		I_{CBO}	-	-	1	µA
Emitter Base Cutoff Current at V_{EB} = 3 V		I_{EBO}	-	-	1	µA
Collector Emitter Saturation Voltage at I_C = 2 A, I_B = 0.2 A		$V_{CE(sat)}$	-	-	0.5	V
Base Emitter Saturation Voltage at I_C = 2 A, I_B = 0.2 A		$V_{BE(sat)}$	-	-	2	V
Gain Bandwidth Product at V_{CE} = 5 V, I_C = 0.1 A		f_T	-	90	-	MHz
Output Capacitance at V_{CB} = 10 V, f = 1 MHz		C_{ob}	-	45	-	pF

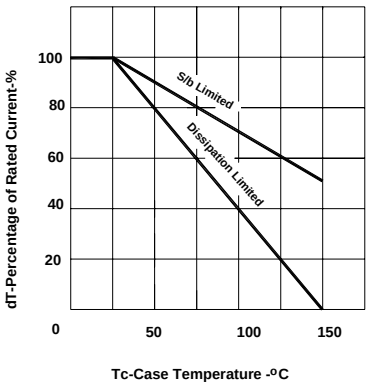
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TYPICAL CHARACTERISTICS (Ta=25°C)

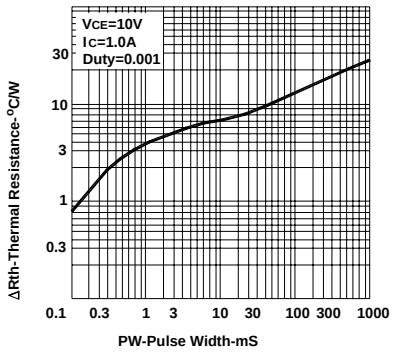
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



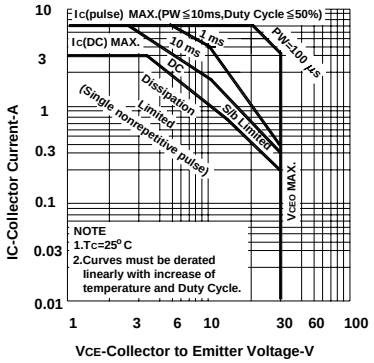
DERATING CURVES FOR ALL TYPES



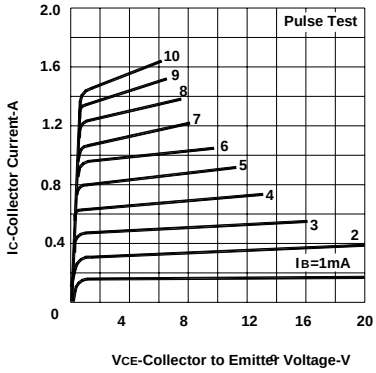
THERMAL RESISTANCE vs. PULSE WIDTH



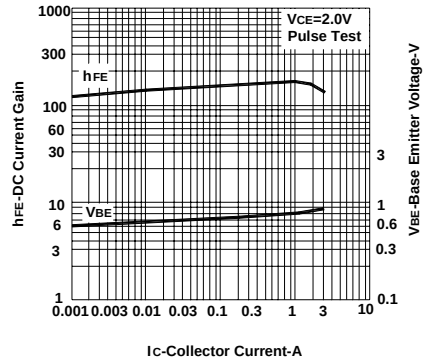
SAFE OPERATING AREAS



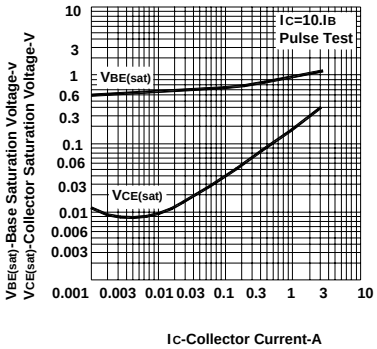
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



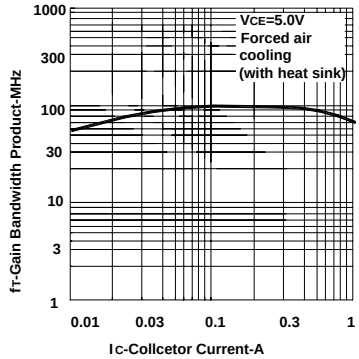
DC CURRENT GAIN, BASE TO EMITTER VOLTAGE vs. COLLECTOR CURRENT



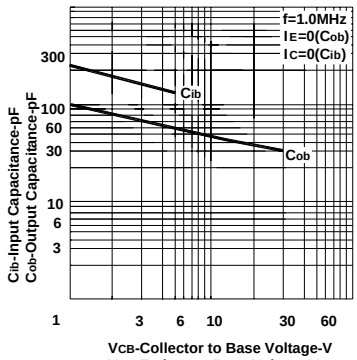
BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. COLLCETOR CURRENT



INPUT AND OUTPUT CAPACITANCE vs. REVERSE VOLTAGE



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