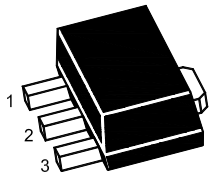
ST 2SD1664U

NPN SILICON EPITAXIAL MEDIUM POWER TRANSISTOR



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

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	40	V
Collector Emitter Voltage	V_{CEO}	32	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current - DC Collector Current - Pulse [1]	I_C I_{CP}	1 2	A A
Total Power Dissipation	P_{tot}	0.5 2 [2]	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{Stg}	- 55 to + 150	°C

[1] Single pulse, PW = 100 ms.

[2] When mounted on a 40 X 40 X 0.7 mm ceramic board.

Characteristics at T_a = 25 °C

Parameter		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V_{CE} = 3 V, I_C = 100 mA Current Gain Group	P Q R	h_{FE} h_{FE} h_{FE}	82 120 180	- - -	180 270 390	- - -
Collector Base Breakdown Voltage at I_C = 50 µA		$V_{(BR)CBO}$	40	-	-	V
Collector Emitter Breakdown Voltage at I_C = 1 mA		$V_{(BR)CEO}$	32	-	-	V
Emitter Base Breakdown Voltage at I_E = 50 µA		$V_{(BR)EBO}$	5	-	-	V
Collector Cutoff Current at V_{CB} = 20 V		I_{CBO}	-	-	0.5	µA
Emitter Cutoff Current at V_{EB} = 4 V		I_{EBO}	-	-	0.5	µA
Collector Emitter Saturation Voltage at I_C = 500 mA, I_B = 50 mA		$V_{CE(sat)}$	-	-	0.4	V
Transition Frequency at $-I_E$ = 50 mA, V_{CE} = 5 V, f = 100 MHz		f_T	-	150	-	MHz
Output Capacitance at V_{CB} = 10 V, f = 1 MHz		C_{ob}	-	15	-	pF

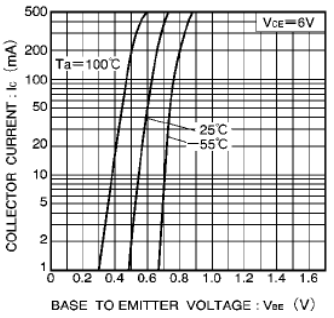


Fig.1 Grounded emitter propagation characteristics

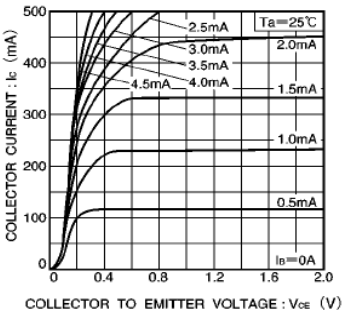


Fig.2 Grounded emitter output characteristics

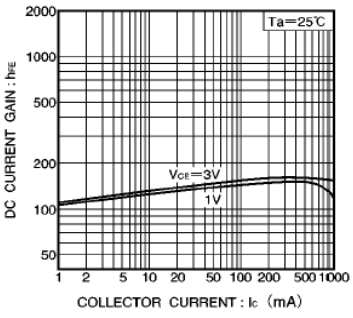


Fig.3 DC current gain vs. collector current (Ⅰ)

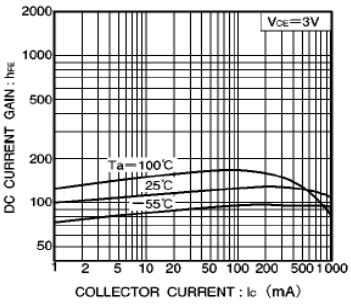


Fig.4 DC current gain vs. collector current (Ⅱ)

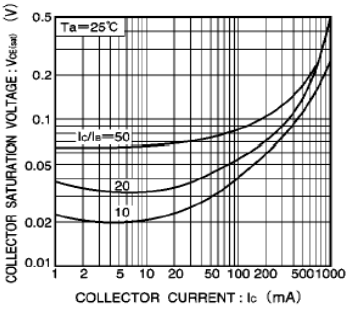


Fig.5 Collector-emitter saturation voltage vs. collector current (Ⅰ)

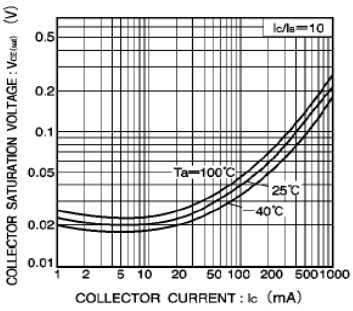


Fig.6 Collector-emitter saturation voltage vs. collector current (Ⅱ)

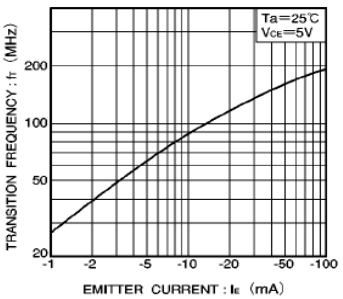


Fig.7 Gain bandwidth product vs. emitter current

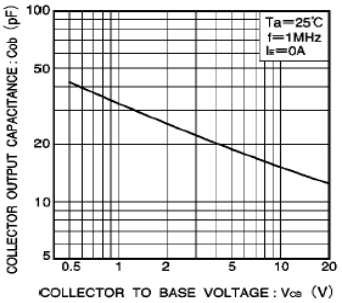


Fig.8 Collector output capacitance vs. collector-base voltage

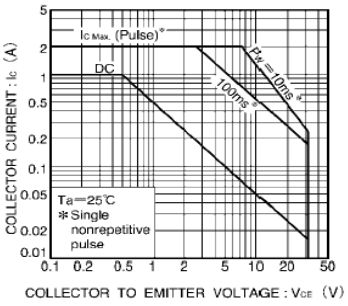


Fig.9 Safe operating area (2SD1664)

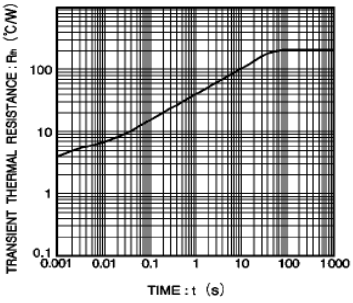
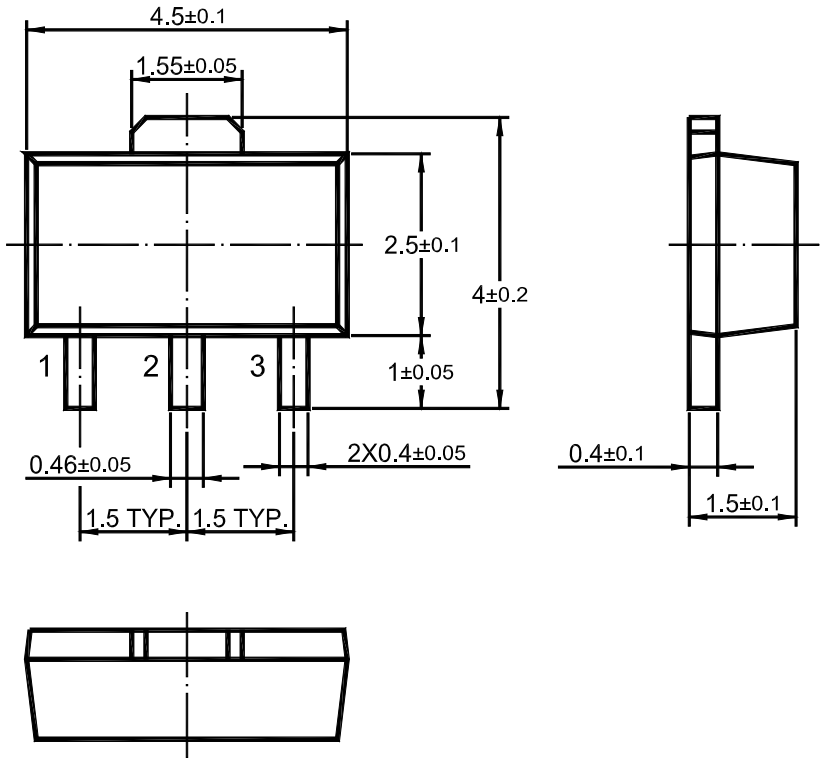


Fig.10 Transient thermal resistance (2SD1664)

SOT-89 PACKAGE OUTLINE



Dimensions in mm