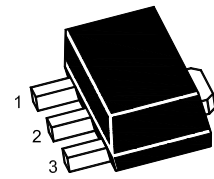


2SD1664U

NPN SILICON EPITAXIAL MEDIUM POWER TRANSISTOR



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

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

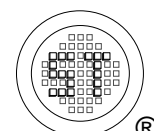
Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	40	V
Collector Emitter Voltage	V_{CEO}	32	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current - DC	I_{C}	1	A
Collector Current - Pulse ¹⁾	I_{CP}	2	A
Total Power Dissipation	P_{tot}	0.5 2 ²⁾	W
Junction Temperature	T_{J}	150	$^\circ\text{C}$
Storage Temperature Range	T_{Stg}	- 55 to + 150	$^\circ\text{C}$

¹⁾ Single pulse, PW = 100 ms.

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

Characteristics at $T_a = 25^\circ\text{C}$

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



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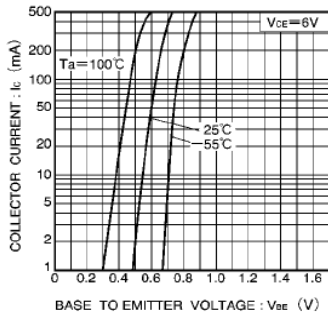


Fig.1 Grounded emitter propagation characteristics

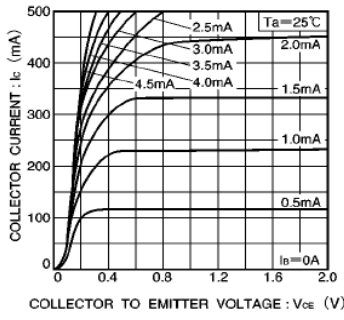


Fig.2 Grounded emitter output characteristics

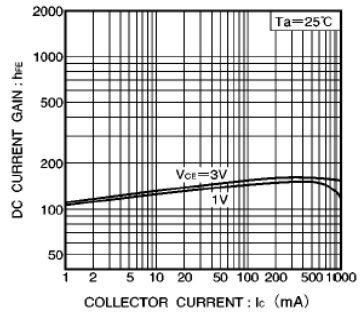


Fig.3 DC current gain vs. collector current (I)

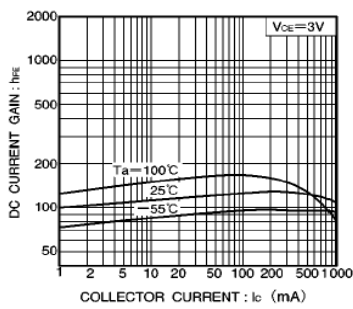


Fig.4 DC current gain vs. collector current (II)

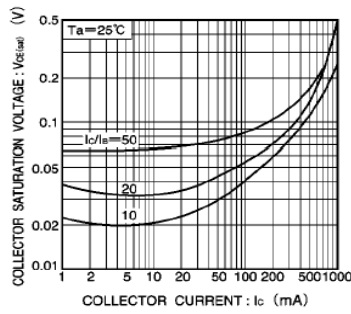


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

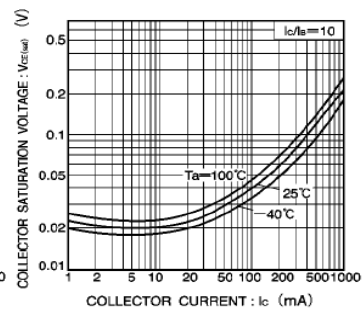


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

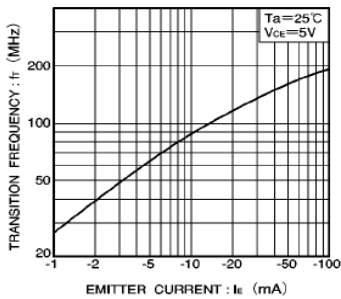


Fig.7 Gain bandwidth product vs. emitter current

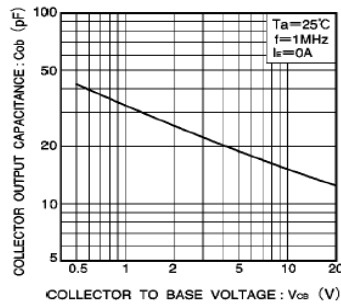


Fig.8 Collector output capacitance vs. collector-base voltage

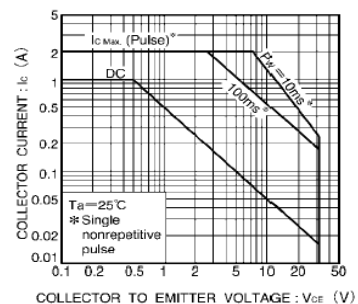


Fig.9 Safe operating area (2SD1664)

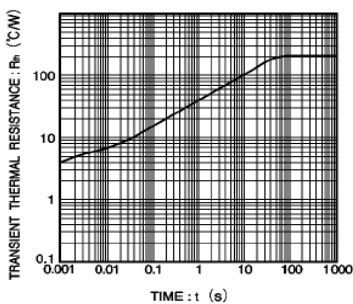
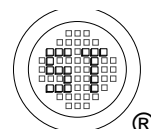
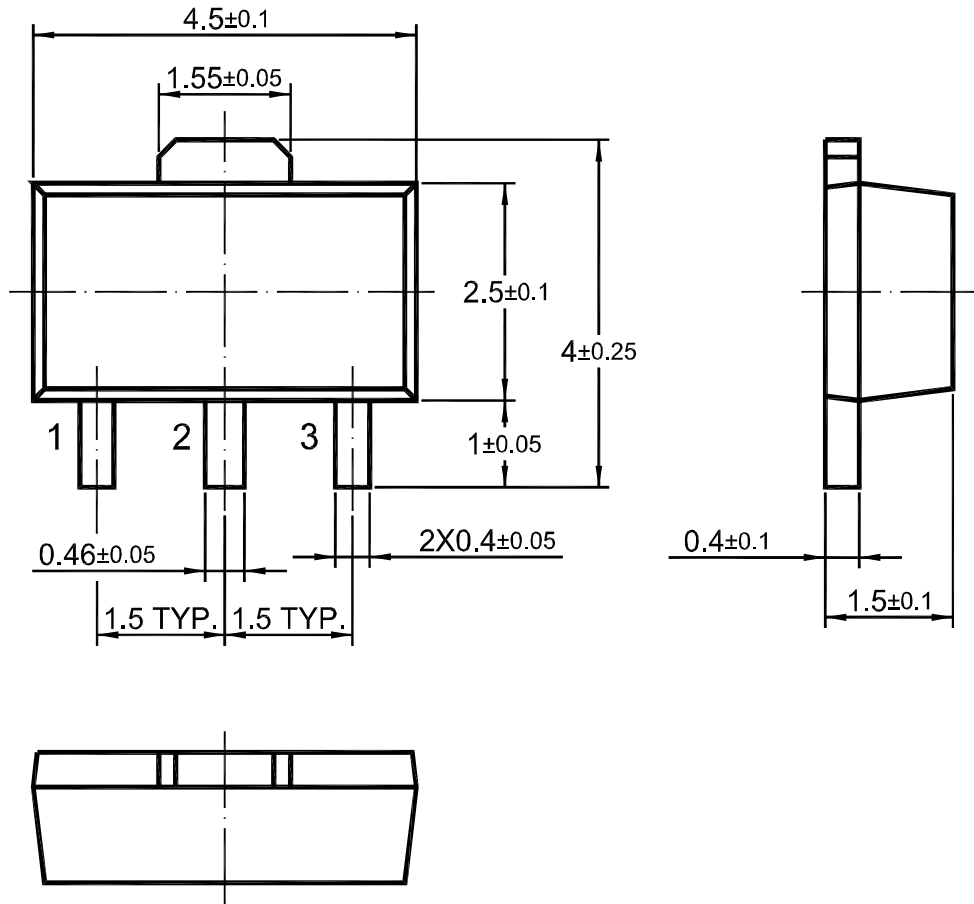


Fig.10 Transient thermal resistance (2SD1664)

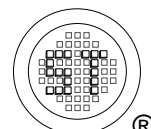


2SD1664U

SOT-89 PACKAGE OUTLINE



Dimensions in mm



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