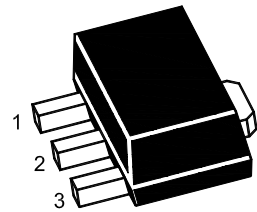


# 2SD2391U

## NPN Silicon Epitaxial Planar Transistor



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

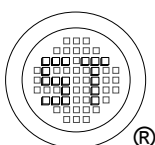
### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	60	V
Collector Emitter Voltage	$V_{CEO}$	60	V
Emitter Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	2	A
Peak Collector Current ( $P_W = 10$ ms)	$I_{CP}$	6	A
Total Power Dissipation	$P_{tot}$	0.5 2 <sup>1)</sup>	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 55 to + 150	$^\circ\text{C}$

<sup>1)</sup> 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 $V_{CE} = 2$ V, $I_C = 500$ mA at $V_{CE} = 2$ V, $I_C = 1.5$ A	$h_{FE}$ $h_{FE}$	120 45	- -	270 -	- -
Collector Base Cutoff Current at $V_{CB} = 50$ V	$I_{CBO}$	-	-	100	nA
Emitter Base Cutoff Current at $V_{EB} = 5$ V	$I_{EBO}$	-	-	100	nA
Collector Base Breakdown Voltage at $I_C = 50$ $\mu\text{A}$	$V_{(BR)CBO}$	60	-	-	V
Collector Emitter Breakdown Voltage at $I_C = 1$ mA	$V_{(BR)CEO}$	60	-	-	V
Emitter Base Breakdown Voltage at $I_E = 50$ $\mu\text{A}$	$V_{(BR)EBO}$	6	-	-	V
Collector Emitter Saturation Voltage at $I_C = 1$ A, $I_B = 50$ mA	$V_{CE(sat)}$	-	-	0.35	V
Transition Frequency at $V_{CE} = 2$ V, $-I_E = 500$ mA, $f = 100$ MHz	$f_T$	-	120	-	MHz
Collector Output Capacitance at $V_{CB} = 10$ V, $f = 1$ MHz	$C_{ob}$	-	21	-	pF



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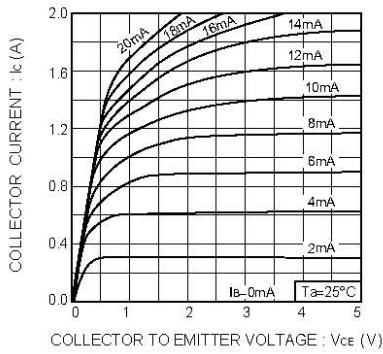


Fig.1 Grounded emitter output characteristics

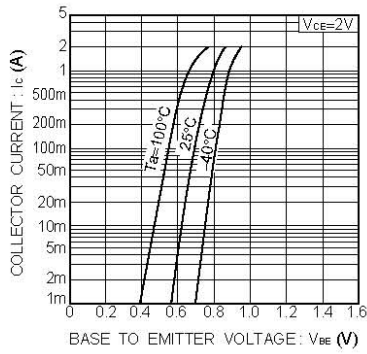


Fig.2 Grounded emitter propagation characteristics

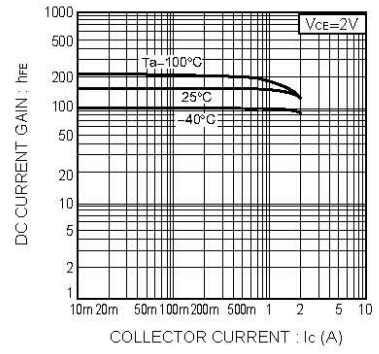


Fig.3 DC current gain vs. collector current ( I )

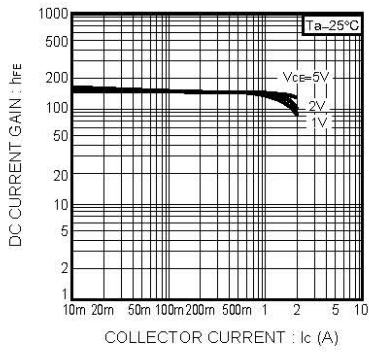


Fig.4 DC current gain vs. collector current ( II )

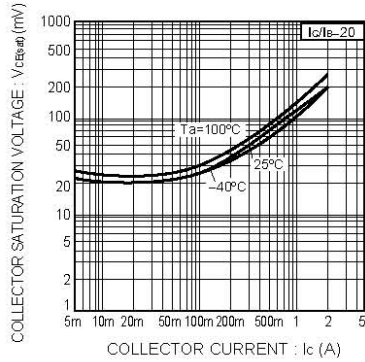


Fig.5 Collector-emitter saturation voltage vs. collector current ( I )

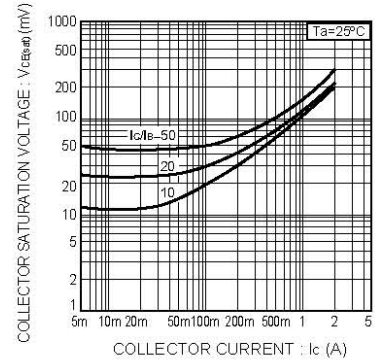
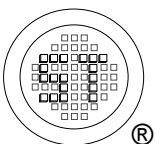


Fig.6 Collector-emitter saturation voltage vs. collector current ( II )

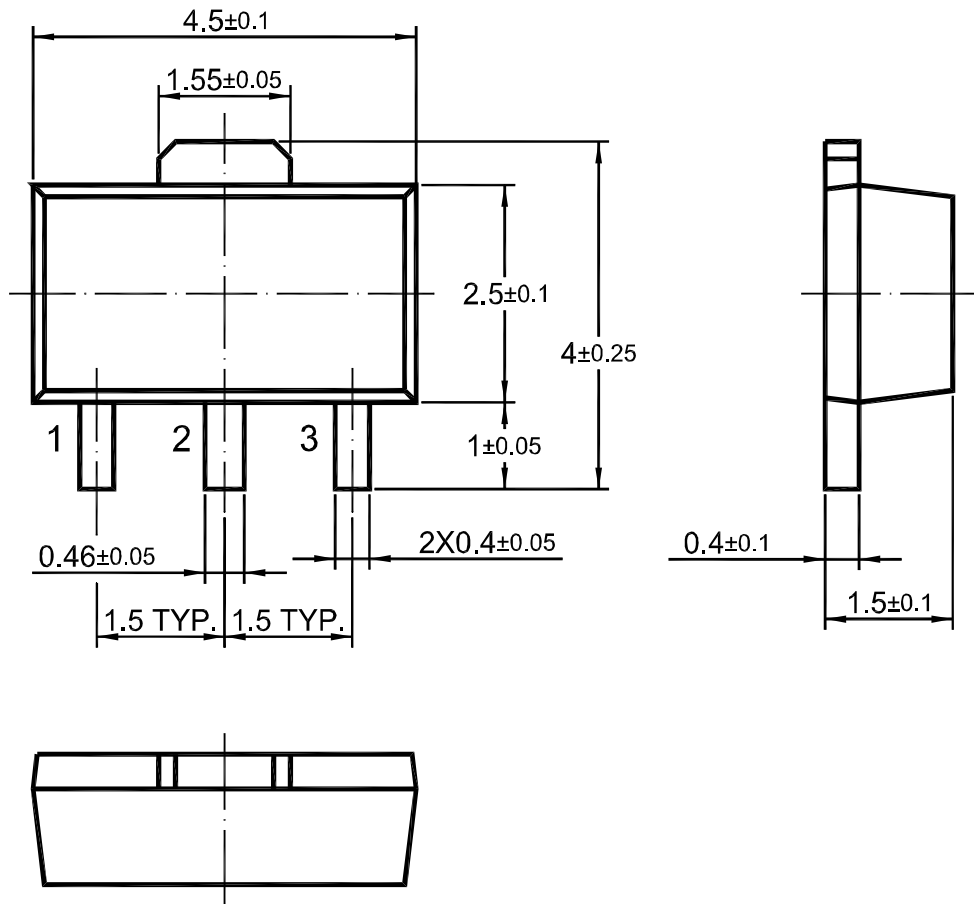


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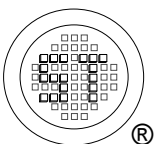


# 2SD2391U

## SOT-89 PACKAGE OUTLINE



Dimensions in mm



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