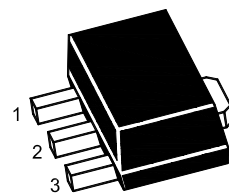


# NPN Silicon Epitaxial Planar Transistor

Low Frequency Transistor



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

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	60	V
Collector Emitter Voltage	$V_{CEO}$	50	V
Emitter Base Voltage	$V_{EBO}$	6	V
Collector Current - DC	$I_C$	3	A
Collector Current - Pulse <sup>1)</sup>	$I_{CP}$	6	A
Total Power Dissipation	$P_{tot}$	0.5 2 <sup>2)</sup>	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{Stg}$	- 55 to + 150	$^\circ\text{C}$

<sup>1)</sup> Single pulse, PW = 10 ms.

<sup>2)</sup> When mounted on a 40 X 40 X 0.7 mm ceramic board.

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE} = 2\text{ V}$ , $I_C = 0.5\text{ A}$ at $V_{CE} = 2\text{ V}$ , $I_C = 1.5\text{ A}$	$h_{FE}$ $h_{FE}$	82 45	- -	390 -	- -
Collector Base Breakdown Voltage at $I_C = 50\text{ }\mu\text{A}$	$V_{(BR)CBO}$	60	-	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	50	-	-	V
Emitter Base Breakdown Voltage at $I_E = 50\text{ }\mu\text{A}$	$V_{(BR)EBO}$	6	-	-	V
Collector Cutoff Current at $V_{CB} = 60\text{ V}$	$I_{CBO}$	-	-	0.1	$\mu\text{A}$
Emitter Cutoff Current at $V_{EB} = 5\text{ V}$	$I_{EBO}$	-	-	0.1	$\mu\text{A}$
Collector Emitter Saturation Voltage at $I_C = 1\text{ A}$ , $I_B = 50\text{ mA}$	$V_{CE(sat)}$	-	-	0.35	V
Transition Frequency at $V_{CE} = 5\text{ V}$ , $-I_E = 0.5\text{ A}$ , $f = 100\text{ MHz}$	$f_T$	-	210	-	MHz
Output Capacitance at $V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	25	-	pF

## CLASSIFICATION OF $h_{FE}$

RANK	P	Q	R
RANGE	82 - 180	120 - 270	180 - 390
MARKING	DKP	DKQ	DKR

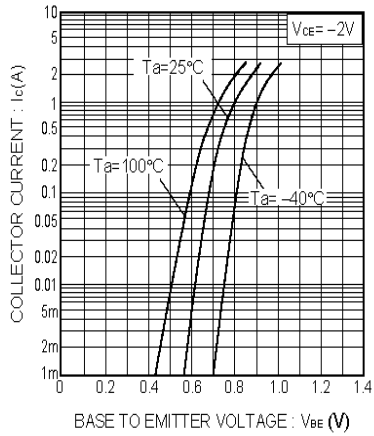


Fig.1 Grounded emitter propagation characteristics

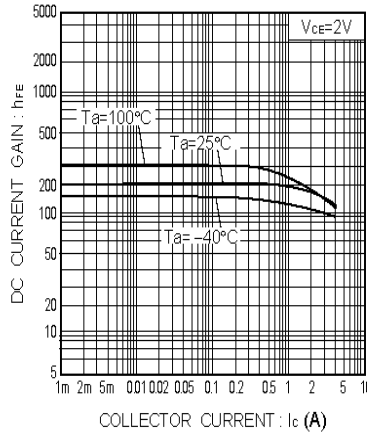


Fig.2 DC current gain vs. collector current

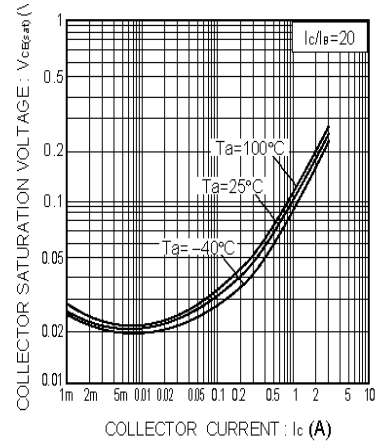


Fig.3 Collector-emitter saturation voltage vs. collector current

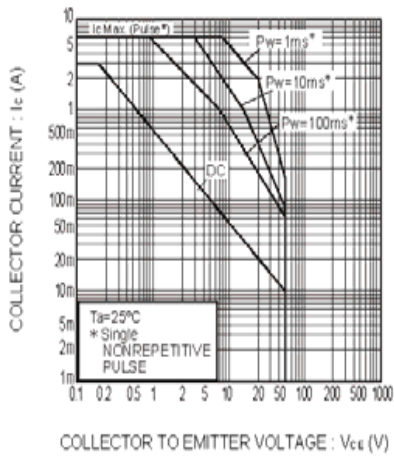


Fig.4 Safe Operating area

## SOT-89 PACKAGE OUTLINE

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