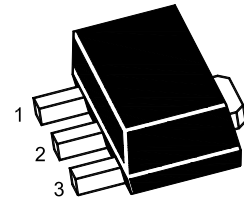


2SC2383U

NPN Silicon Epitaxial Planar Transistor

Features

- The transistor is subdivided into three groups, R, O and Y, according to its DC current gain
- On special request, these transistors can be manufactured in different pin configurations



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

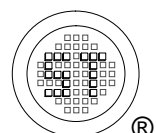
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	160	V
Collector Emitter Voltage	V_{CEO}	160	V
Emitter Base Voltage	V_{EBO}	6	V
Collector Current	I_C	1	A
Base Current	I_B	0.5	A
Collector Power Dissipation	P_{tot}	900	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient ¹⁾	$R_{\theta JA}$	139	$^\circ\text{C/W}$

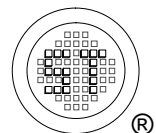
¹⁾Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate



2SC2383U

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE} = 5\text{ V}$, $I_C = 200\text{ mA}$	Current Gain Group R O Y	h_{FE}	60	-	120	-
		h_{FE}	100	-	200	-
		h_{FE}	160	-	320	-
Collector Base Cutoff Current at $V_{CB} = 150\text{ V}$	I_{CBO}	-	-	1	μA	
Emitter Base Cutoff Current at $V_{EB} = 6\text{ V}$	I_{EBO}	-	-	1	μA	
Collector Base Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CBO}$	160	-	-	V	
Collector Emitter Breakdown Voltage at $I_C = 10\text{ mA}$	$V_{(BR)CEO}$	160	-	-	V	
Emitter Base Breakdown Voltage at $I_E = 1\text{ mA}$	$V_{(BR)EBO}$	6	-	-	V	
Collector Emitter Saturation Voltage at $I_C = 500\text{ mA}$, $I_B = 50\text{ mA}$	$V_{CE(sat)}$	-	-	1.5	V	
Base Emitter Voltage at $I_C = 5\text{ mA}$, $V_{CE} = 5\text{ V}$	V_{BE}	0.45	-	0.75	V	
Transition Frequency at $V_{CE} = 5\text{ V}$, $I_C = 200\text{ mA}$	f_T	20	100	-	MHz	
Collector Output Capacitance at $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	-	20	pF	



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Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

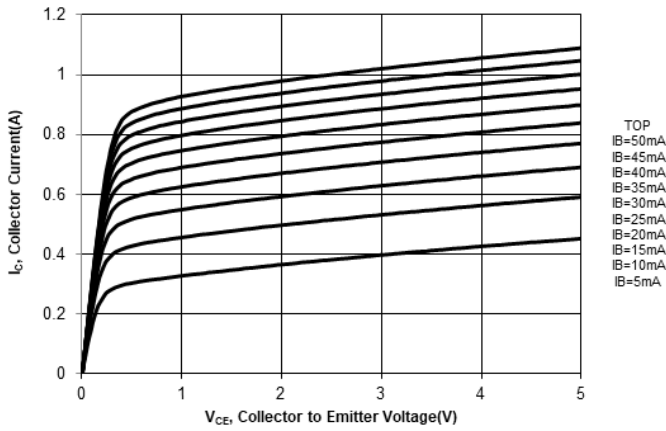


Fig. 2 Collector Current vs. Base to Emitter Voltage

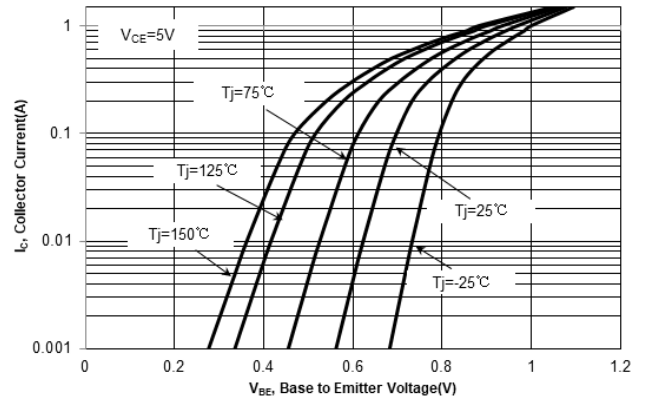


Fig. 3 DC Current Gain vs. Collector Current

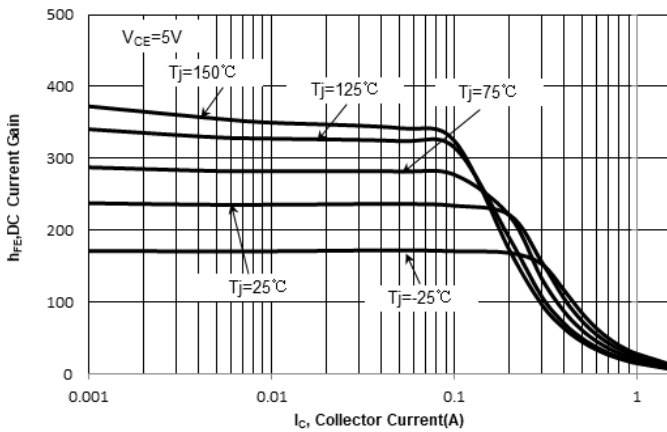
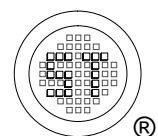
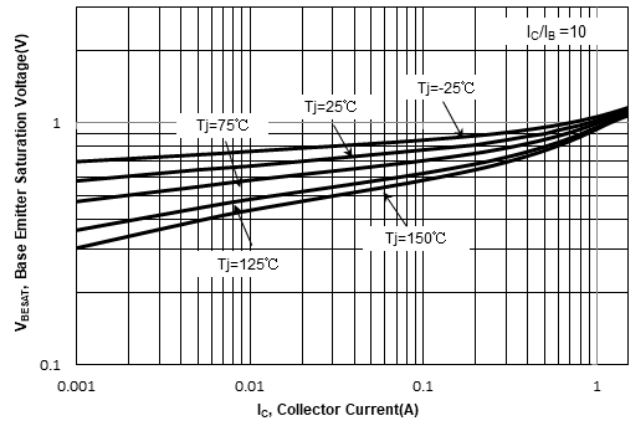


Fig. 4 V_{BESAT} vs. Collector Current



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Electrical Characteristics Curves

Fig. 5 V_{CESAT} vs. Collector Current

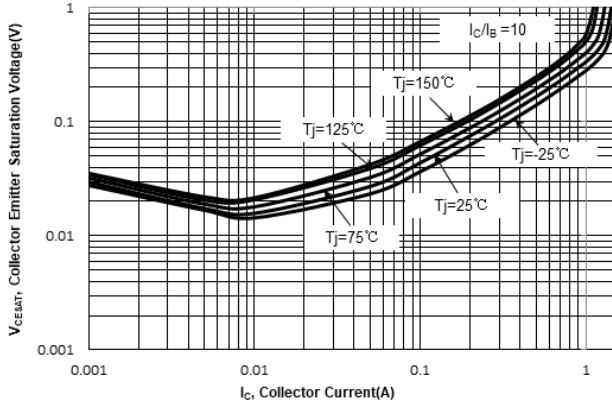


Fig. 6 Output Capacitance

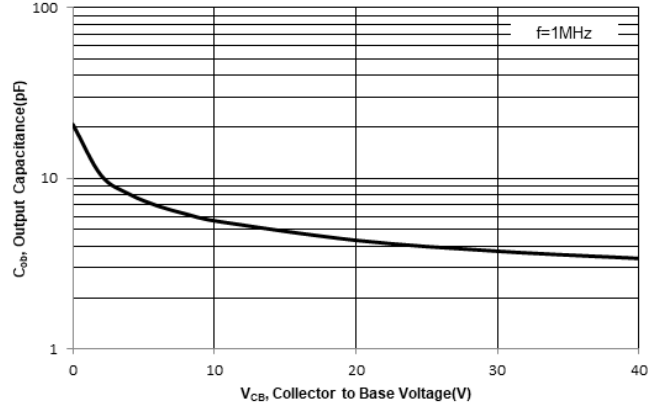
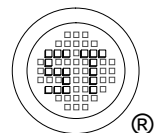
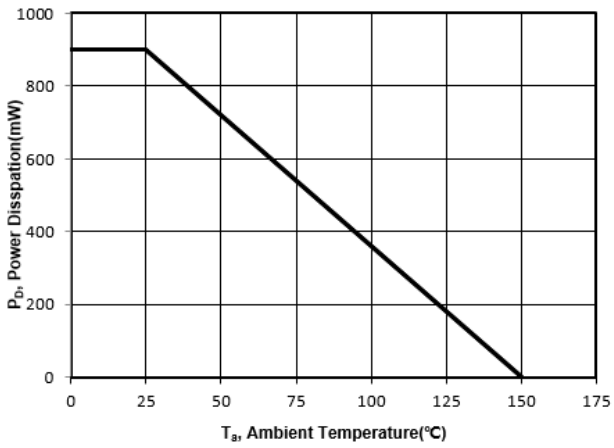


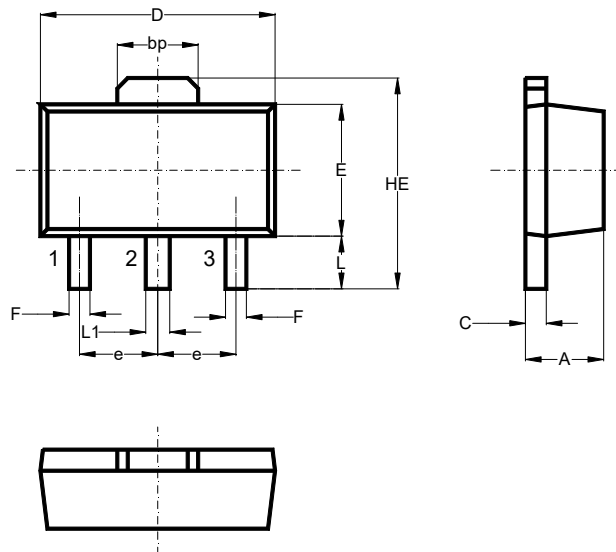
Fig 7. Power Derating Curve



2SC2383U

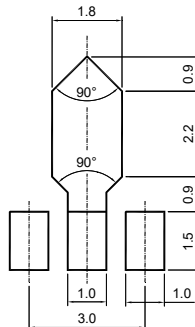
Package Outline (Dimensions in mm)

SOT-89



Unit	A	bp	C	D	E	F	HE	e	L	L1
mm	1.6	1.60	0.5	4.6	2.6	0.45	4.25	1.5	1.05	0.51
	1.4	1.50	0.3	4.4	2.4	0.35	3.75	typ.	0.95	0.41

Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-89	12	8 ± 0.1	0.315 ± 0.004	178	7	1,000
				330	13	4,000

Marking information

" 2SC2383*U " = Part No. (" * " = hFE Current Gain Group)

"YM" = Date Code Marking

"Y" = Year

"M" = Month

Font type: Arial

