

## NPN General Purpose Amplifier



### Features

- Epoxy meets UL-94 V-0 flammability rating
- Halogen free available upon request by adding suffix "HF"
- Moisture sensitivity level 1
- Low collector-emitter saturation voltage

### Mechanical Data

- **Package:** SOT-89
- Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** 2383

### ■ Maximum Ratings (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Value
Minimum Collector-Emitter Voltage	$V_{CEO}$	V	$I_C=10mA, I_B=0$	160
Minimum Collector-Base Voltage	$V_{CBO}$	V	$I_C=100\mu A, I_E=0$	160
Minimum Emitter-Base Voltage	$V_{EBO}$	V	$I_E=10\mu A, I_C=0$	6
Collector Current	$I_C$	A		1
Peak Collector Current	$I_{CM}$	A	single pulse, $t_P \leq 1ms$	1.5
Collector Power Dissipation	$P_C$	mW		500
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	°C/W		250
Operation Junction Temperature	$T_j$	°C		-55 to +150
Storage Temperature	$T_{stg}$	°C		-55 to +150



## ■ Electrical Characteristics (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	TYP	Max
Collector-Emitter Voltage	$V_{CEO}$	V	$I_C=10mA, I_B=0$	160		
Collector-Base Voltage	$V_{CBO}$	V	$I_C=100\mu A, I_E=0$	160		
Emitter-Base Voltage	$V_{EBO}$	V	$I_E=10\mu A, I_C=0$	6		
Collector-Base cut-off current	$I_{CBO}$	$\mu A$	$V_{CB}=150V$			1
Emitter-Base cut-off current	$I_{EBO}$	$\mu A$	$V_{EB}=6V$			1
DC Current Gain	$h_{FE}$		$V_{CE}=5V, I_C=200mA$	100		320
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	$I_C=500mA, I_B=50mA$			1
Base-Emitter Voltage	$V_{BE}$	V	$V_{CE}=5V, I_C=5mA$			0.75
Transition Frequency	$f_T$	MHz	$I_C=200mA, V_{CE}=5V$	20		

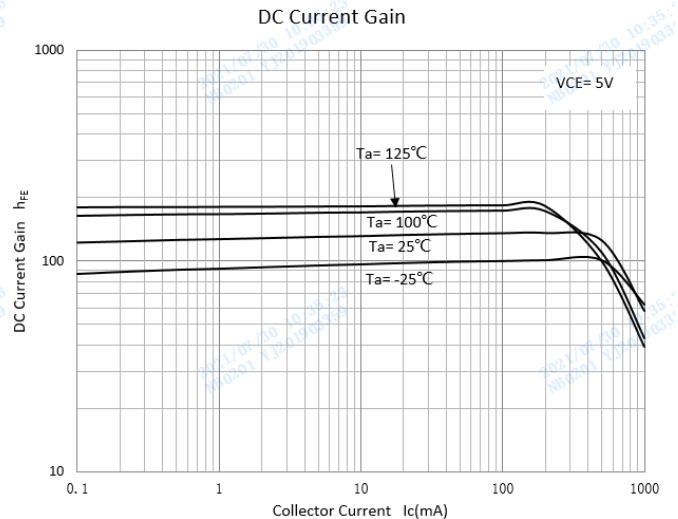
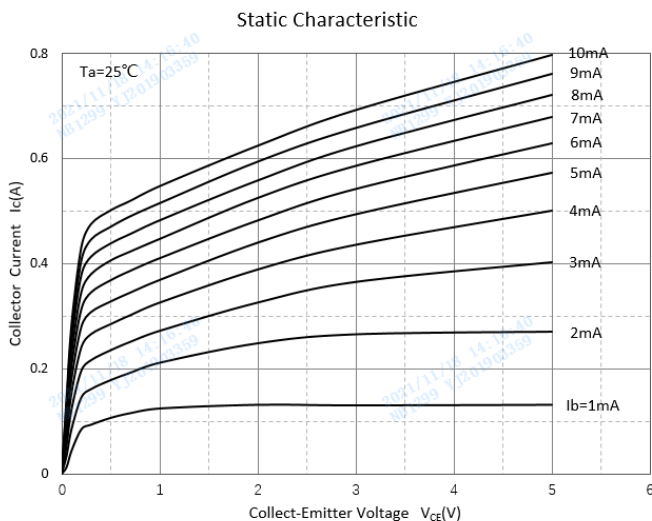
## ■ Classification of $h_{FE}$

Rank	2SC2383P-O	2SC2383P-Y
Range	100-200	160-320

## ■ Ordering Information (Example)

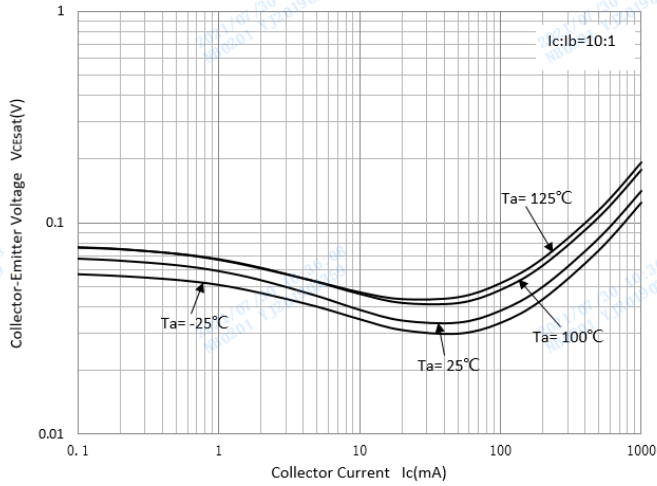
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
2SC2383P	F2	Approximate 0.055	1000	8000	32000	7" reel

## ■ Characteristics (Typical)

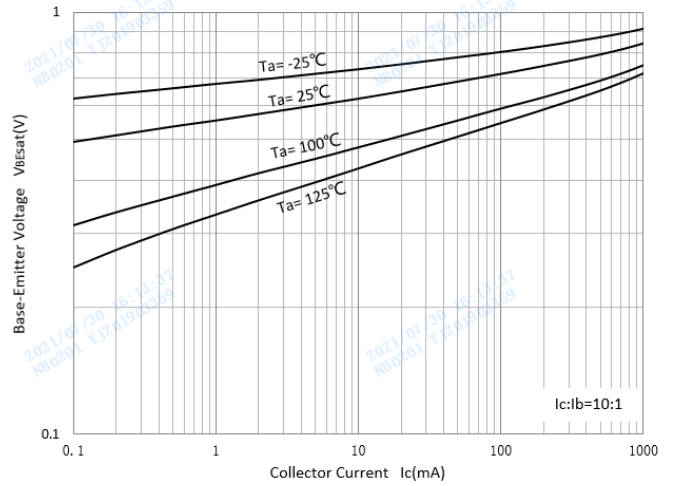




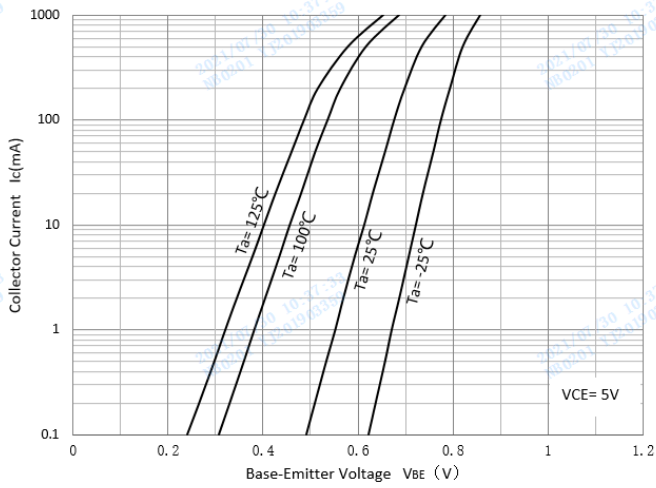
### Collector-Emitter Saturation Voltage



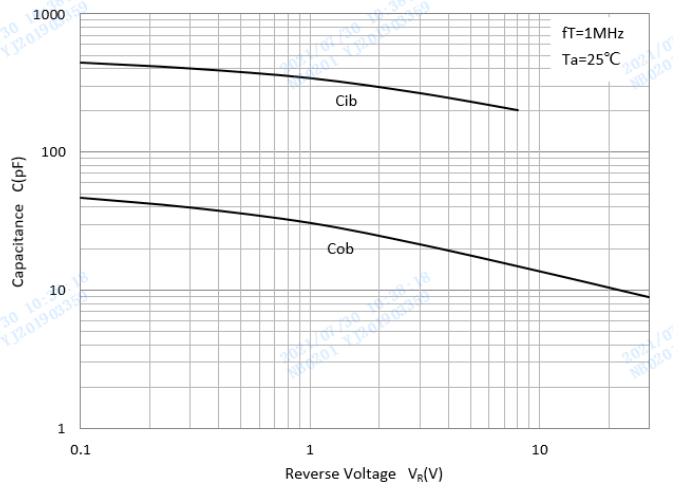
### Base-Emitter Saturation Voltage



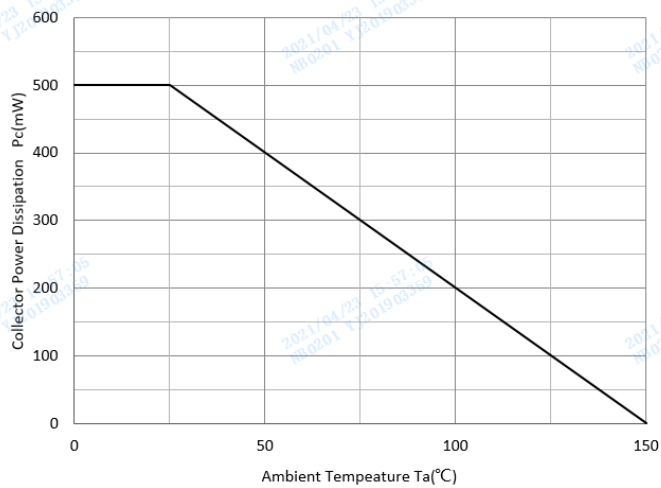
### Base-Emitter On Voltage



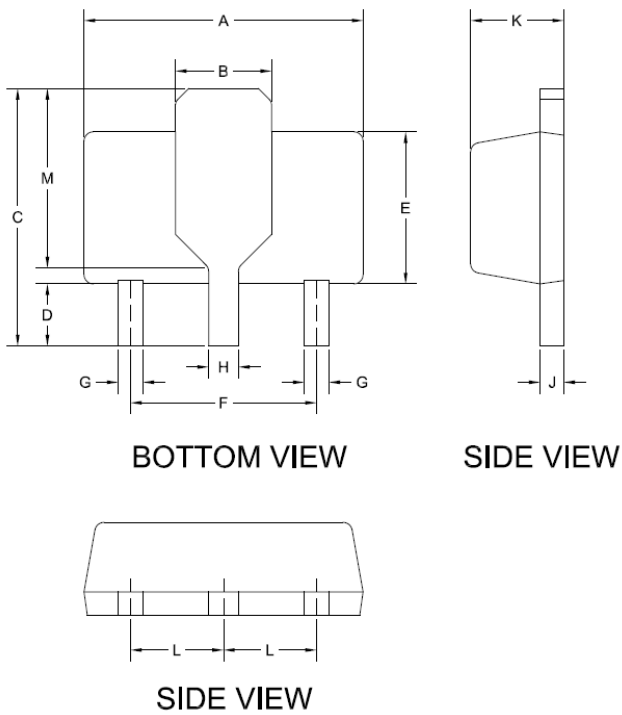
### $C_{ob}/C_{ib}-V_{CB}/V_{EB}$



### Collector Power Derating Curve

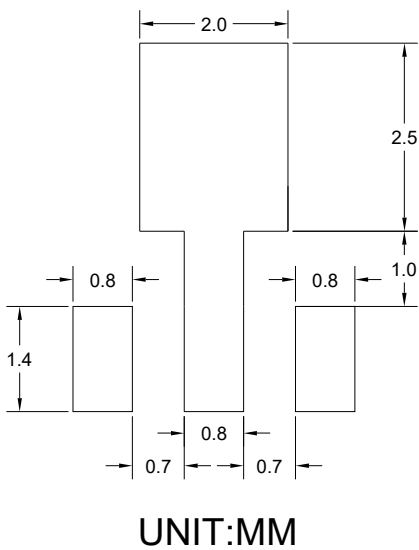


## ■SOT-89 Package Outline Dimensions



DIM	DIMENSIONS			
	INCHES		MM	
	MIN.	MAX.	MIN.	MAX.
A	0.173	0.181	4.400	4.600
B	0.061 TYP.		1.550 TYP.	
C	0.155	0.167	3.940	4.250
D	0.031	0.047	0.800	1.200
E	0.094	0.102	2.400	2.600
F	0.118 TYP.		3.00 TYP.	
G	0.014	0.019	0.360	0.480
H	0.017	0.022	0.440	0.560
J	0.014	0.017	0.350	0.440
K	0.055	0.063	1.400	1.600
L	0.059 TYP.		1.500 TYP.	
M	0.108 TYP.		2.750 TYP.	

## ■SOT-89 Suggested Pad Layout





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