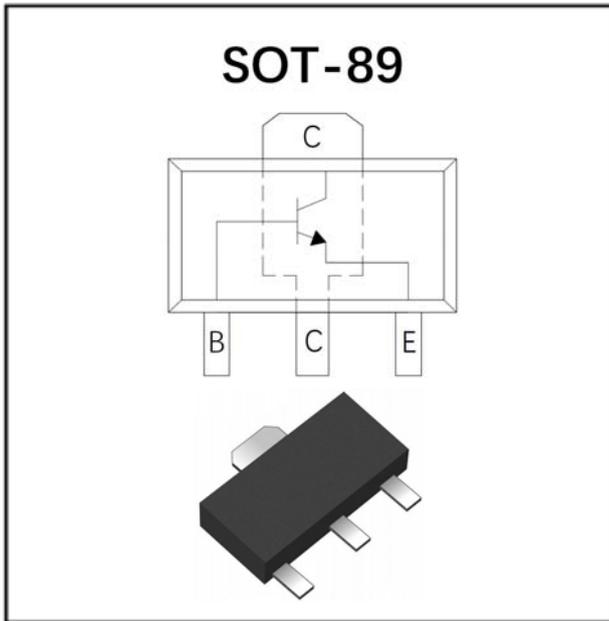


## NPN General Purpose Amplifier



### 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:** S43

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

Item	Symbol	Unit	Conditions	Value
Minimum Collector-Emitter Voltage	$V_{CEO}$	V	$I_C=10mA, I_B=0$	50
Minimum Collector-Base Voltage	$V_{CBO}$	V	$I_C=100\mu A, I_E=0$	50
Minimum Emitter-Base Voltage	$V_{EBO}$	V	$I_E=100\mu A, I_C=0$	5
Collector Current	$I_C$	A		3
Peak Collector Current	$I_{CM}$	A	single pulse, $t_P=1ms$	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



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

Item	Symbol	Unit	Conditions	Min	TYP	Max
Collector-Emitter Voltage	$V_{CE0}$	V	$I_C=10mA, I_B=0$	50		
Collector-Base Voltage	$V_{CBO}$	V	$I_C=100\mu A, I_E=0$	50		
Emitter-Base Voltage	$V_{EBO}$	V	$I_E=100\mu A, I_C=0$	5		
Collector-Base cut-off current	$I_{CBO}$	nA	$V_{CB}=50V$			100
Collector-Emitter cut-off current	$I_{CES}$	nA	$V_{CE}=50V, V_{BE}=0V$			100
Emitter-Base cut-off current	$I_{EBO}$	nA	$V_{EB}=5V$			100
DC Current Gain	$h_{FE1}$		$V_{CE}=2V, I_C=0.1A$	300		
	$h_{FE2}$		$V_{CE}=2V, I_C=0.5A$	300		
	$h_{FE3}$		$V_{CE}=2V, I_C=1A$	300		700
	$h_{FE4}$		$V_{CE}=2V, I_C=2A$	200		
	$h_{FE5}$		$V_{CE}=2V, I_C=3A$	100		
Collector-Emitter Saturation Voltage	$V_{CE(sat)1}$	mV	$I_C=0.5A, I_B=50mA$			80
	$V_{CE(sat)2}$	mV	$I_C=1A, I_B=50mA$			160
	$V_{CE(sat)3}$	mV	$I_C=2A, I_B=100mA$			280
	$V_{CE(sat)4}$	mV	$I_C=2A, I_B=200mA$			260
	$V_{CE(sat)5}$	mV	$I_C=3A, I_B=300mA$			370
Equivalent On-resistance	$R_{CEsat}$	mΩ	$I_C=2A, I_B=200mA$			130
Base-Emitter Saturation Voltage	$V_{BE(sat)1}$	V	$I_C=2A, I_B=100mA$			1.1
	$V_{BE(sat)2}$	V	$I_C=3A, I_B=300mA$			1.2
Base-Emitter Turn-on Voltage	$V_{BE(on)}$	V	$V_{CE}=2V, I_C=1A$			1.1
Delay time	$t_d$	ns	$V_{CC}=10V, I_C=1.5A;$ $I_{Bon}=0.15A$ $I_{Boff}=0.15A$		57	
Rise time	$t_r$	ns			21	
Turn-on time	$t_{on}$	ns			78	
Storage time	$t_s$	ns			315	
Fall time	$t_f$	ns			82	
Turn-off time	$t_{off}$	ns			397	
Transition Frequency	$f_T$	MHz		$I_C=100mA, V_{CE}=5V, f=100MHz$	100	
Collector Capacitance	$C_{ob}$	pF	$V_{CB}=10V, I_E=0A, f=1MHz$			25

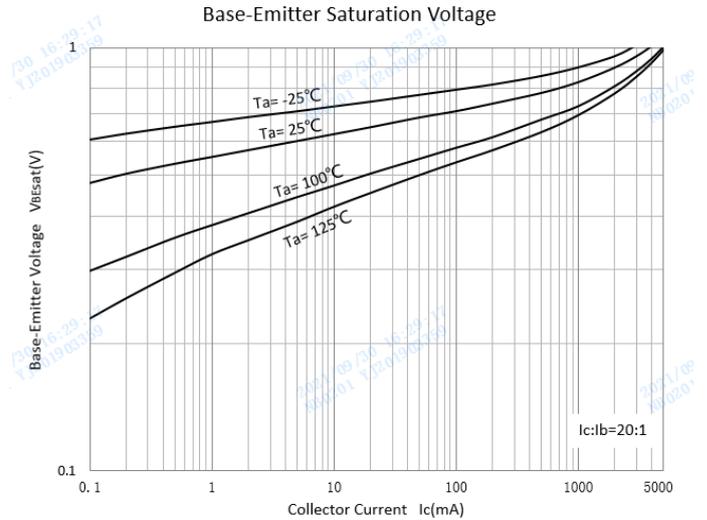
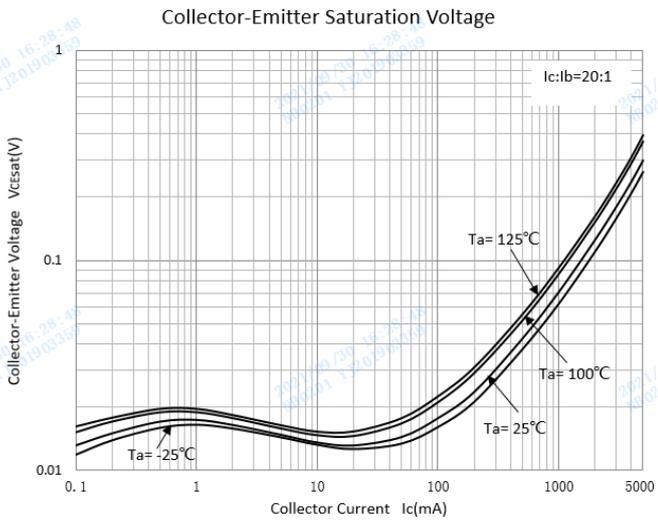
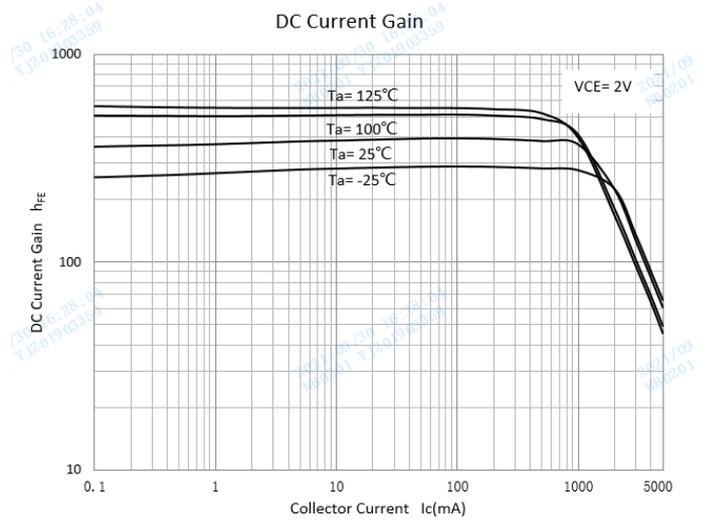
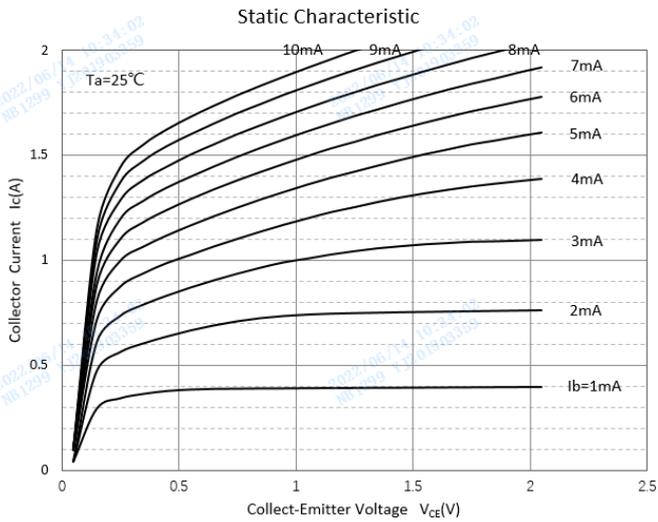


# PBSS4350X

## Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
PBSS4350X	F2	Approximate 0.055	1000	8000	32000	7" reel

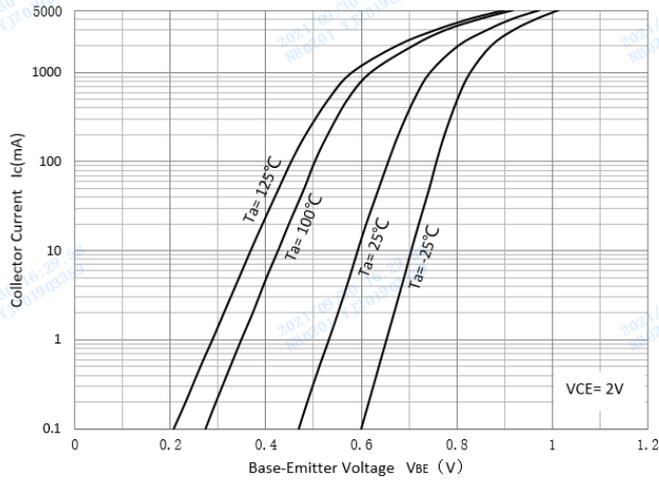
## Characteristics (Typical)



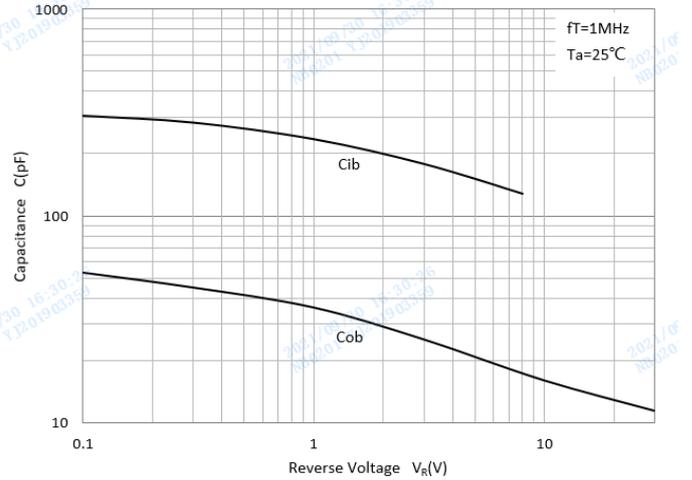


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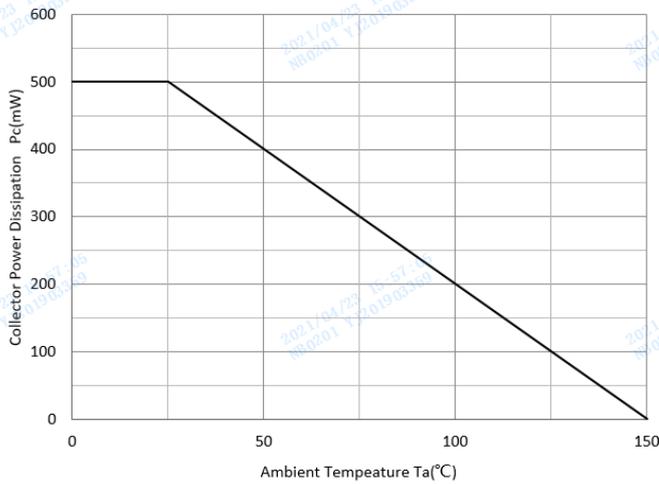
Base-Emitter On Voltage



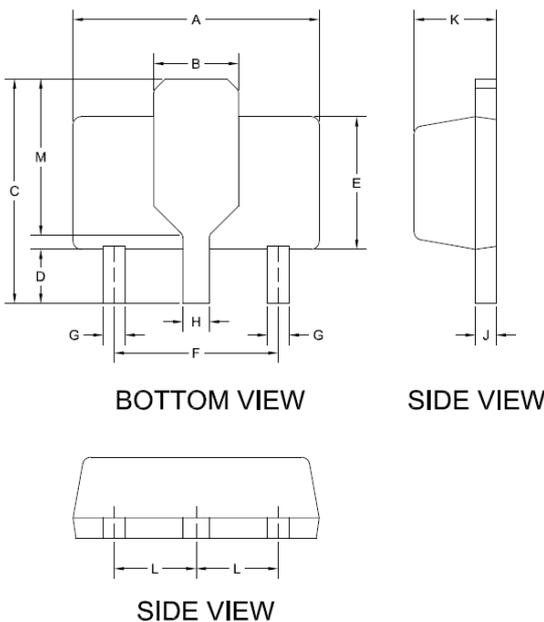
$C_{ob}/C_{ib}-V_{CB}/V_{EB}$



Collector Power Derating Curve



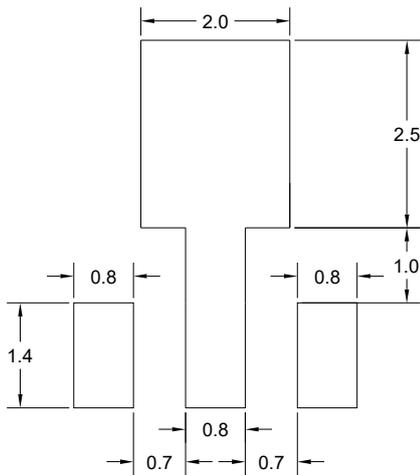
## ■ SOT-89 Package Outline Dimensions



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



UNIT:MM



## PBSS4350X

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