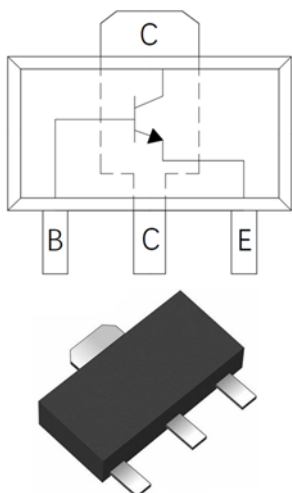


NPN General Purpose Amplifier

SOT-89



Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for automatic insertion

Application

- Signal amplification
- Switching circuit

Mechanical data

- **Package:** SOT-89
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ Maximum Ratings ($T_a=25^{\circ}\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				1B
Collector-base voltage	V_{CB0}	V	$I_C=100\mu\text{A}$, $I_E=0$	40
Collector-emitter voltage	V_{CE0}	V	$I_C=1\text{mA}$, $I_B=0$	40
Emitter-base voltage	V_{EB0}	V	$I_E=100\mu\text{A}$, $I_C=0$	6
Collector current	I_C	A		4
Peak Collector Current	I_{CM}	A	single pulse, $t_p=1\text{ms}$	10
Power dissipation	P_D	mW		550
Junction temperature	T_J	$^{\circ}\text{C}$		-55 to +150
Storage temperature	T_{STG}	$^{\circ}\text{C}$		-55 to +150



PBSS4540X

RoHS
COMPLIANT

■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

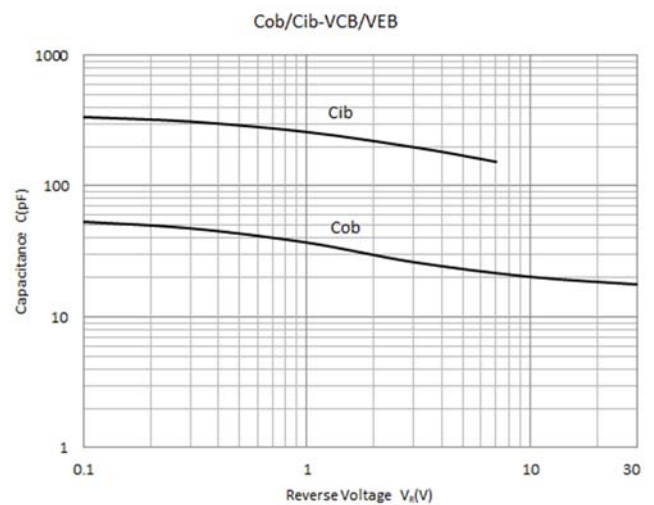
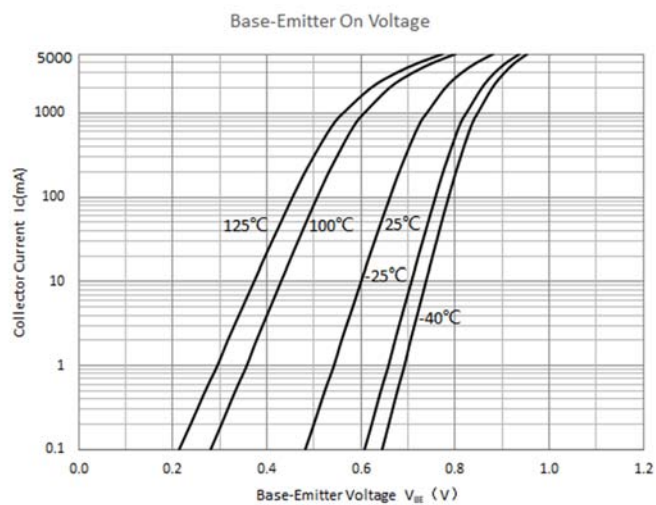
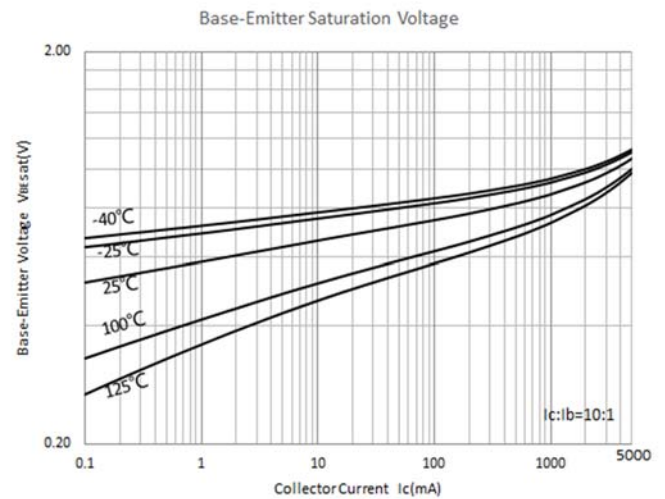
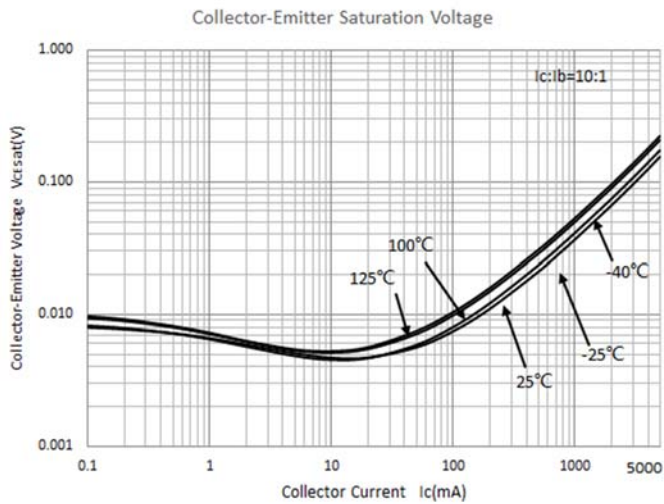
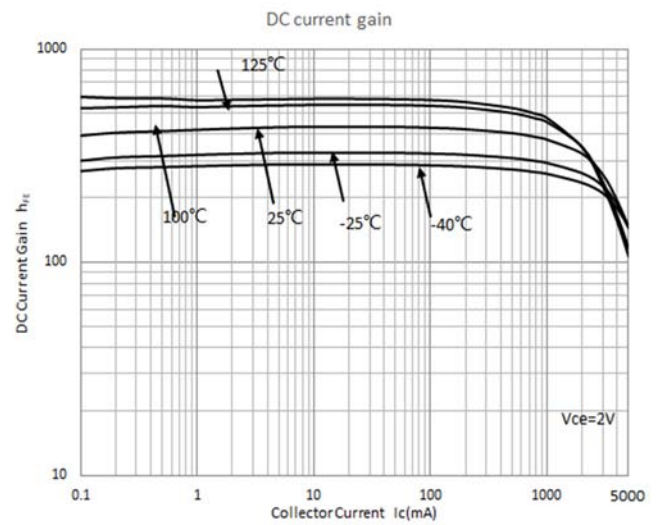
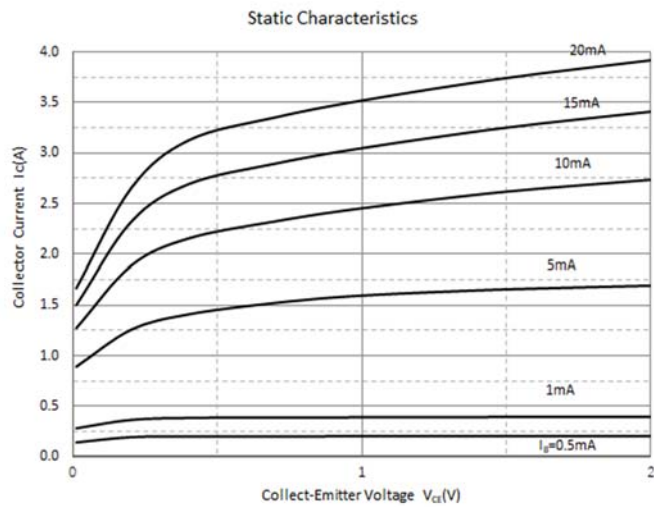
Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V _{(BR)CBO}	V	I _C =100μA, I _E =0	40		
Collector-emitter breakdown voltage	V _{(BR)CEO}	V	I _C =1mA, I _B =0	40		
Emitter-base breakdown voltage	V _{(BR)EBO}	V	I _E =100μA, I _C =0	6		
Collector-base cut-off current	I _{CBO}	nA	V _{CB} =30V, I _E =0A			100
Emitter-base cut-off current	I _{EBO}	nA	V _{EB} =5V, I _B =0A			100
Collector Cutoff Current	I _{CES}	nA	V _{CE} =30V, I _C =0A			100
DC current gain	h _{FE}		V _{CE} =2V I _C =0.5A	300		
			V _{CE} =2V I _C =1A	300		
			V _{CE} =2V I _C =2A	250		
			V _{CE} =2V I _C =5A	100		
Collector-emitter saturation voltage	V _{CE(sat)}	mV	I _C =0.5A I _B =5mA			90
			I _C =1A I _B =10mA			120
			I _C =2A I _B =200mA			150
			I _C =4A I _B =200mA			290
			I _C =5A I _B =500mA			355
Collector-emitter saturation resistance	R _{CE(sat)}	mΩ	I _C =5A I _B =500mA			71
Base-emitter saturation voltage	V _{BE(sat)}	V	I _C =4A I _B =200mA			1.1
			I _C =5A I _B =500mA			1.2
Base-emitter turn-on voltage	V _{BE(ON)}	V	V _{CE} =2V I _C =2A			1.1

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	227
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	38

Note: (1) The device is installed and tested on 25.4 * 25.4 * 1.5mm P.C.B.

■ Characteristics(Typical)





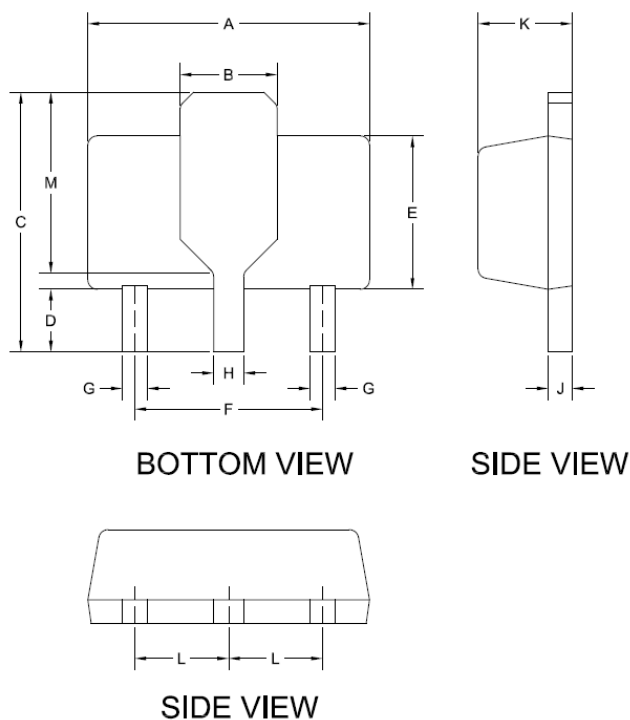
PBSS4540X

RoHS
COMPLIANT

■ Ordering Information

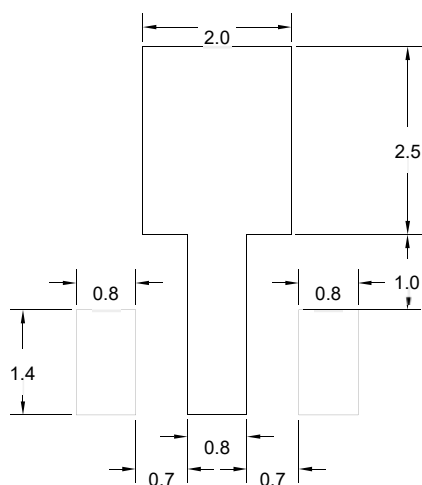
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
PBSS4540X	F2	Approximate 0.055	1000	8000	32000	7" reel

■ Outline Dimensions



DIMENSIONS				
DIM	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.	

■ Suggested Pad Layout



UNIT:MM



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