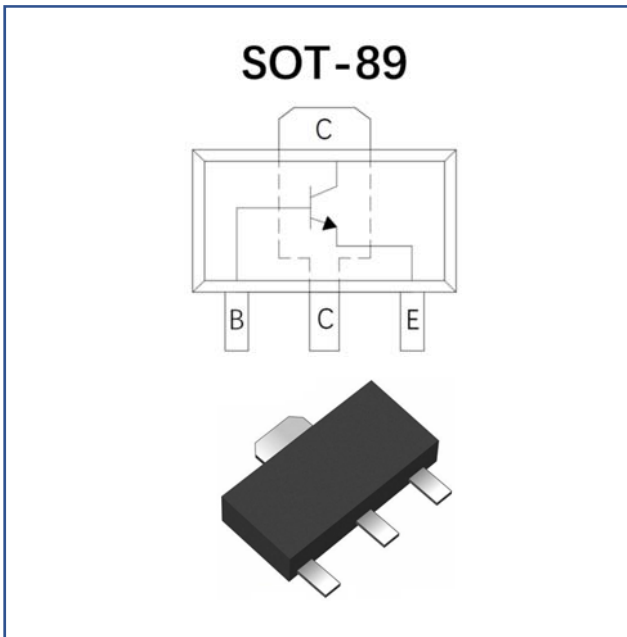


NPN General Purpose Amplifier



Features

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

Application

- Low saturation voltage
- High speed switching

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				C554
Collector-base voltage	V_{CB0}	V	$I_C=100\mu\text{A}, I_E=0$	100
Collector-emitter voltage	V_{CE0}	V	$I_C=1\text{mA}, I_B=0$	100
Emitter-base voltage	V_{EB0}	V	$I_E=100\mu\text{A}, I_C=0$	6
Collector current	I_C	A		2
Power dissipation	P_D	mW		500
Operation junction temperature	T_J	$^\circ\text{C}$		-55 to +150
Storage temperature	T_{STG}	$^\circ\text{C}$		-55 to +150



2SC554

■ 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	100		
Collector-emitter breakdown voltage	V _{(BR)CEO}	V	I _C =1mA, I _B =0	100		
Emitter-base breakdown voltage	V _{(BR)EBO}	V	I _E =100μA, I _C =0	6		
Collector-base cut-off current	I _{CBO}	μA	V _{CB} =100V, I _E =0			1
Emitter-base cut-off current	I _{EBO}	μA	V _{EB} =4V, I _C =0			1
DC current gain	h _{FE}		V _{CE} =3V I _C =100mA	82		270
Collector-emitter saturation voltage	V _{CE(sat)}	V	I _C =500mA I _B =25mA			0.2
		V	I _C =1A I _B =50mA			0.3
Collector-base output capacitance	C _{ob}	pF	V _{CB} =10V, I _E =0, f=1MHz		16	

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	250
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	200

Note:

(1) Device mounted on PCB, single-sided copper, with standard footprint



■ Characteristics

Fig 1: Static Characteristics

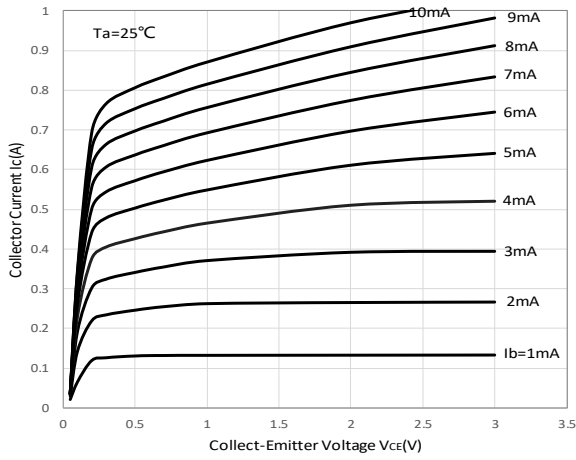


Fig 2: DC Current Gain

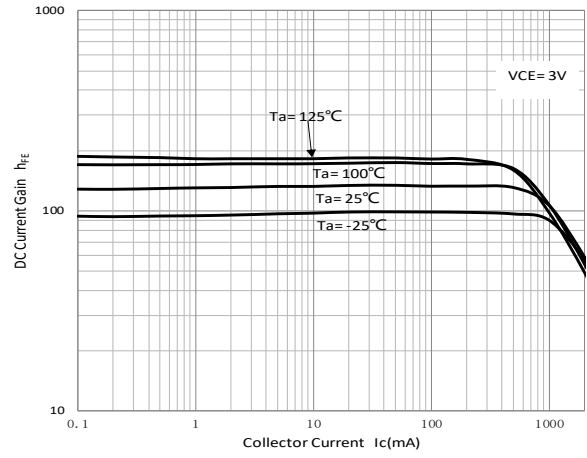


Fig 3: Collector-emitter saturation voltage

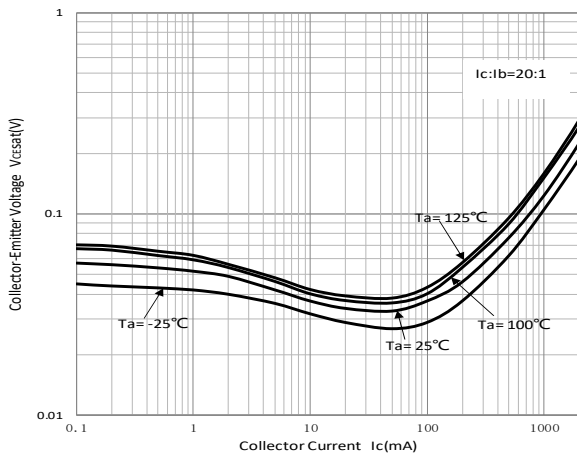


Fig 4: Base-emitter saturation voltage

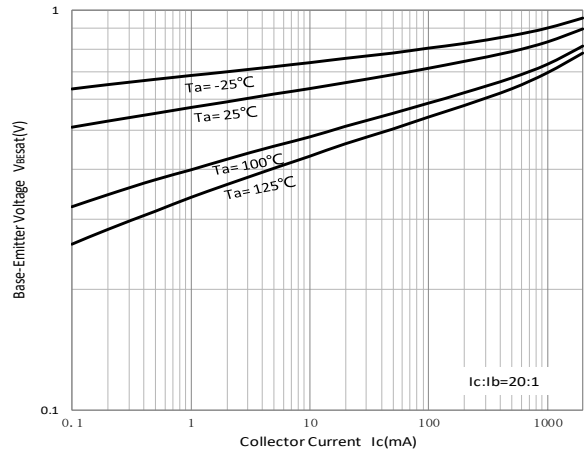


Fig 5: Base-emitter on voltage

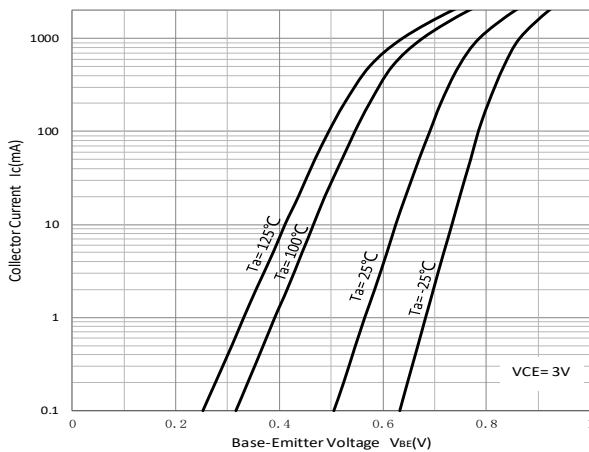


Fig 6: Cob/Cib-Vcb/Veb

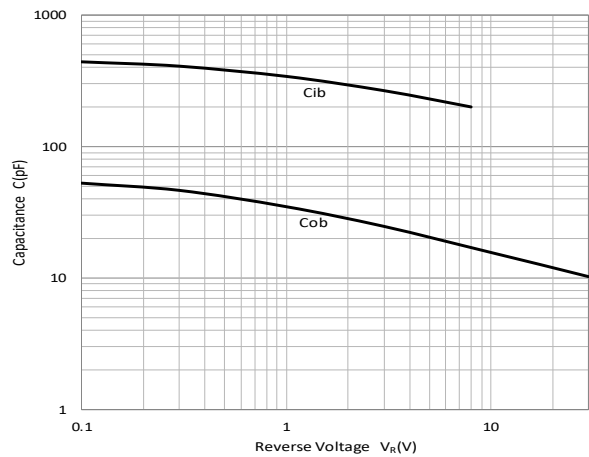
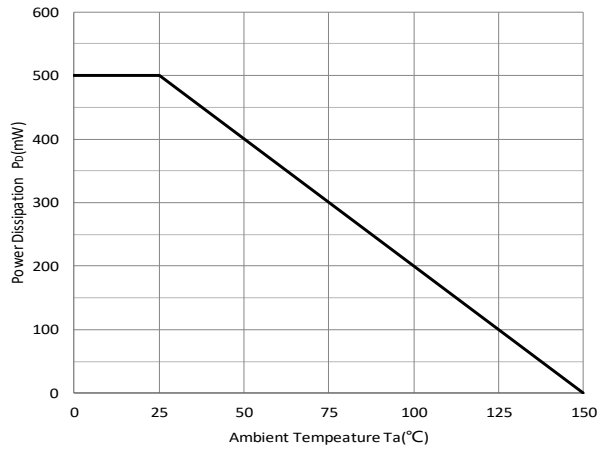


Fig 7: Pd-Ta Curve



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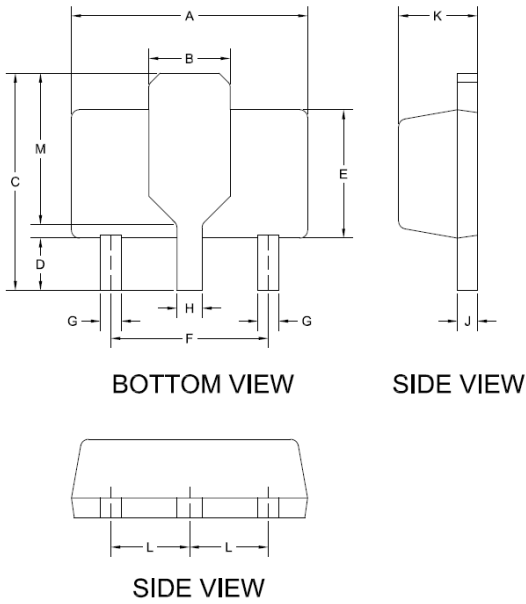


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■ Ordering Information

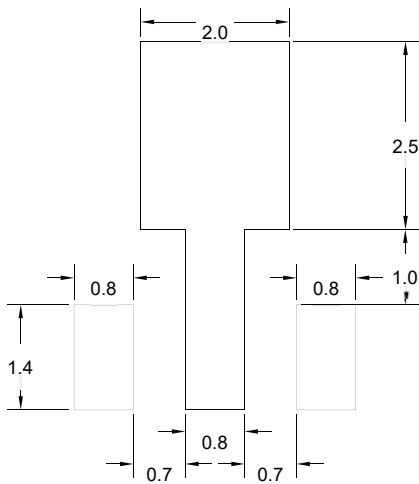
Prefered P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
2SC554	F2	Approximate 0.055	1000	8000	32000	7" reel

■ 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.	

■ Suggested Pad Layout



UNIT:MM



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