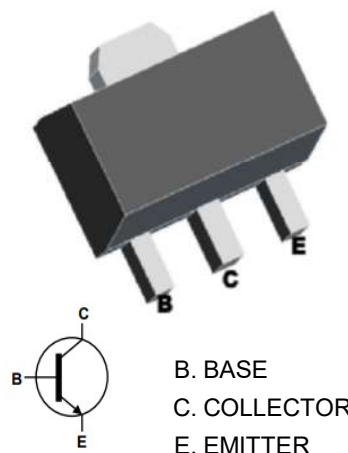




1. Features

- Low saturation voltage
- High speed switching

SOT-89



2. Mechanical Data

- Case:Molded Plastic,SOT-89 .
- Epoxy:UL 94V-0 rate flame retardant.
- Terminals:Plated Leads Solderable per MIL-STD-750,Method-2026.
- Marking: C554
- Mounting Position : Any.

3. Maximum Ratings

Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified.

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	2	A
Collector Power Dissipation	P_C	500	mW
Junction Temperature	T_J	-55~+150	°C
Storage Temperature	T_{stg}	-55~+150	°C

4. Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

Characteristics	Symbol	Condition	Min	TYP	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$, $I_E=0$	100	-	-	V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}$, $I_B=0$	100	-	-	V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}$, $I_C=0$	6	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB}=100\text{V}$, $I_E=0$	-	-	1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=4\text{V}$, $I_C=0$	-	-	1	μA
DC current gain	h_{FE}	$V_{CE}=3\text{V}$, $I_C=100\text{mA}$	82	-	270	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500\text{mA}$, $I_B=25\text{mA}$	-	-	0.2	V
		$I_C=1\text{A}$, $I_B=50\text{mA}$	-	-	0.3	V
Base-emitter On Voltage	$V_{BE(sat)}$	$I_C=1\text{A}$, $I_B=50\text{mA}$	-	-	1.2	V
Transition frequency	f_T	$V_{CE}=5\text{V}$, $I_C=100\text{mA}$	30	-	-	MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$	-	16	-	pF

hFE Classification

Type	Q	P
Range	82-180	120-270



5. Rating And Characteristic Curves

Fig.1 Static Characteristic

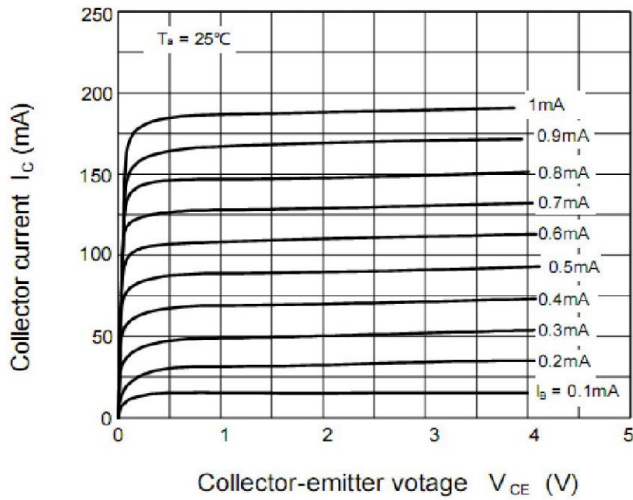


Fig.2 DC current Gain

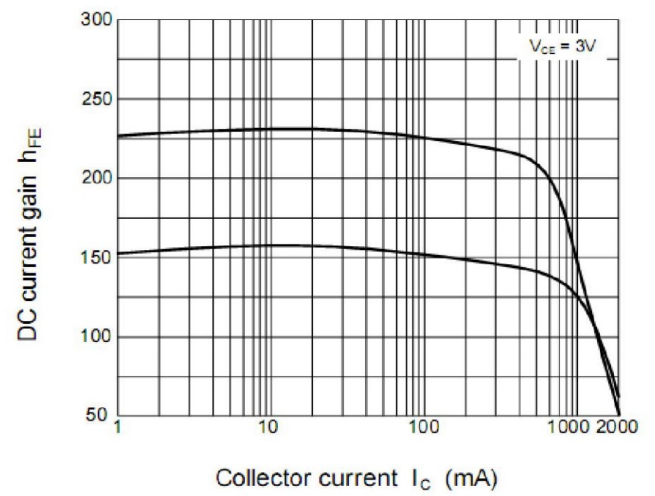


Fig.3 Collector-Emitter Saturation Voltage

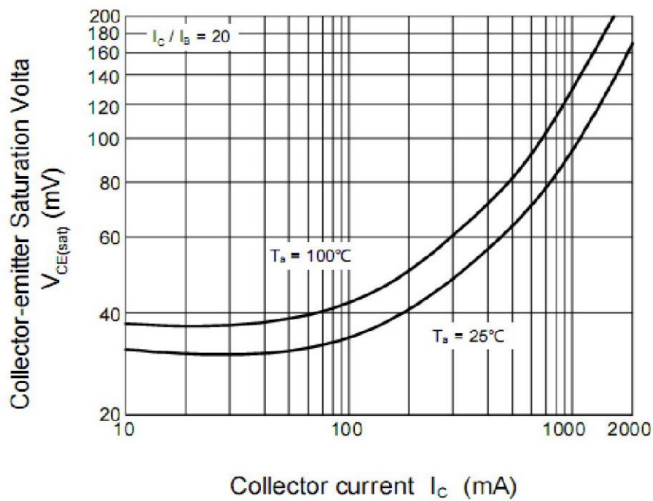


Fig.4 Base-Emitter Saturation Voltage

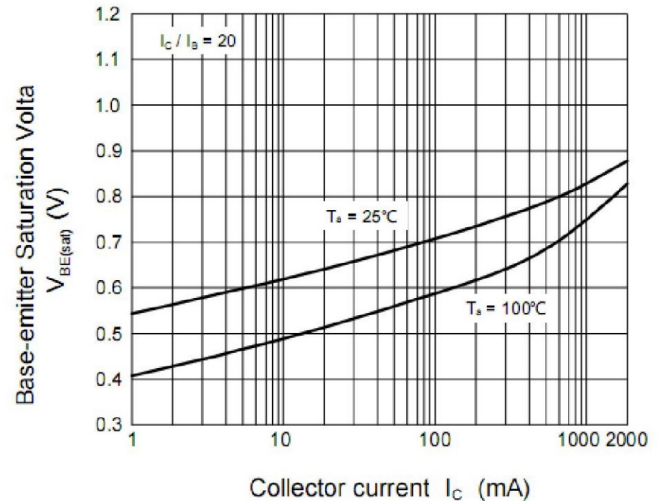


Fig.5 Capacitance characteristics

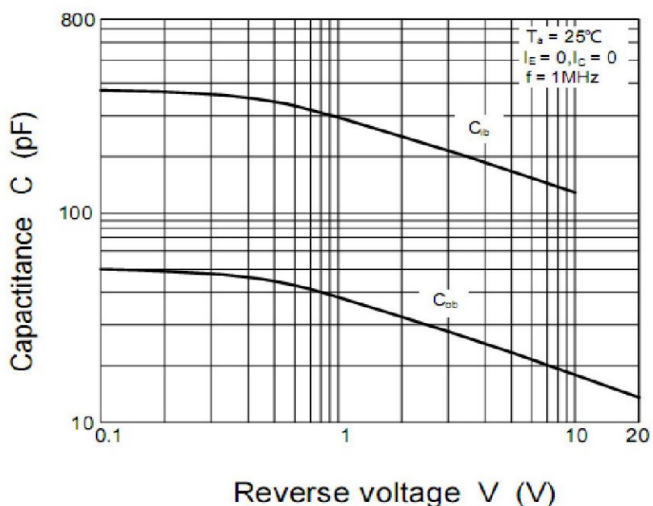
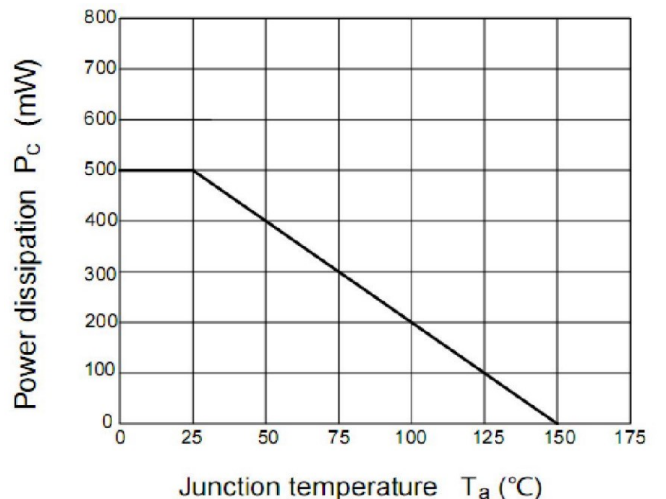
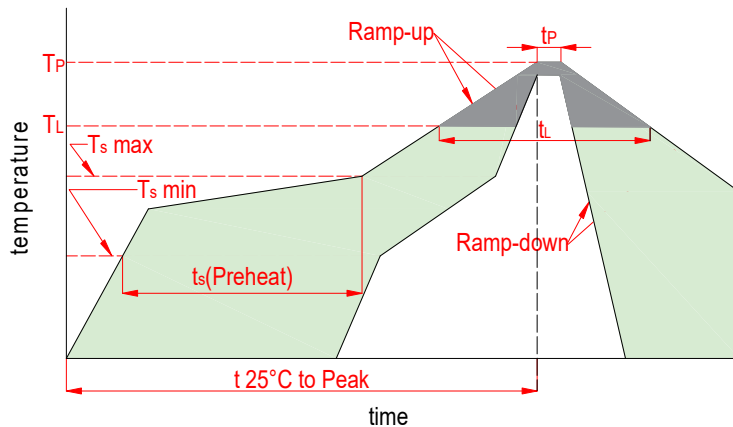


Fig.6 Power Derating



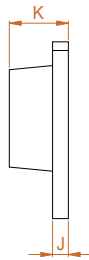
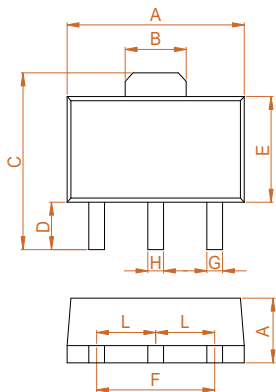


6. Soldering Parameters



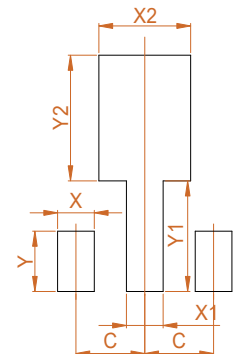
Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s (min))	150℃
	Temp. max(T_s (min))	200℃
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3℃/s max
T_s (max) to T_L -Ramp-up Rate		3℃/s max
Reflow	Temp.(T_L)(Liquidus)	217℃
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_P)		260 ^{+0/-5} ℃
Time within actual peak Temp.(t_p)		30s max
Ramp-down Rate		6℃/s max
Time 25℃ to peak Tempe.(T_p)		8 minutes max
Do not exceed		260℃

7. Dimensions

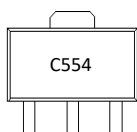


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.169	0.185	4.300	4.700
B	0.055	0.071	1.400	1.800
C	0.154	0.167	3.900	4.250
D	0.035	0.047	0.900	1.200
E	0.091	0.106	2.300	2.700
F	0.118		3.000	
G	0.013	0.024	0.320	0.600
H	0.013	0.024	0.320	0.600
J	0.013	0.020	0.340	0.500
K	0.055	0.063	1.400	1.600
L	0.059		1.500	
X	0.031		0.800	
Y	0.047		1.200	
X1	0.031		0.800	
Y1	0.087		2.200	
X2	0.079		2.000	
Y2	0.098		2.500	
C	0.059		1.500	

Mounting PAD Layout



8. Part Marking System



9. Package Information

Package	Part Number	Marking Code	Quantity(pcs)
SOT-89	2SC554	C554	1000



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