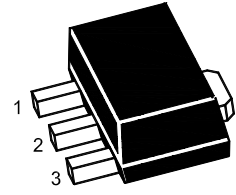




# 2SC4541U

## NPN Silicon Epitaxial Planar Transistor



1.Base 2.Collector 3.Emitter  
SOT-89 Plastic Package

for power switching and power amplifier applications

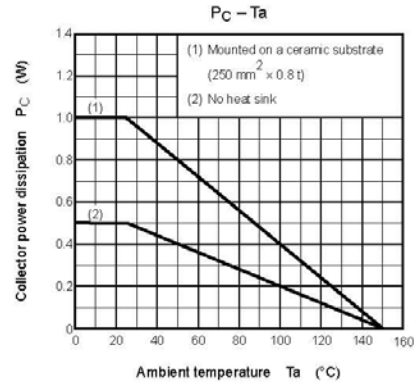
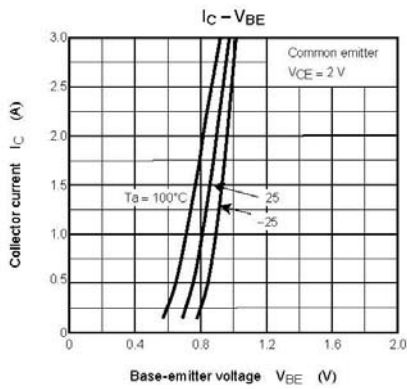
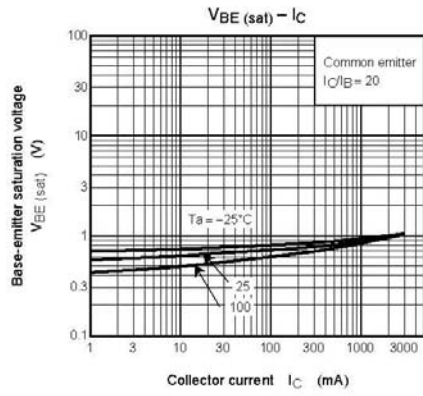
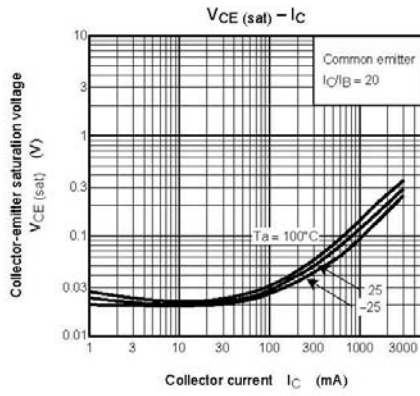
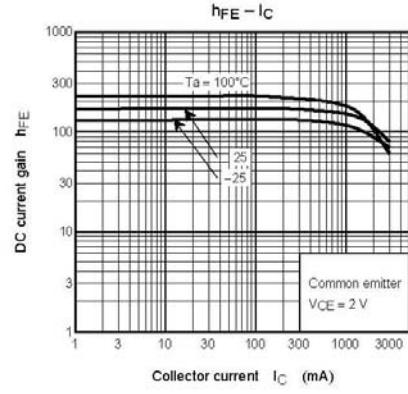
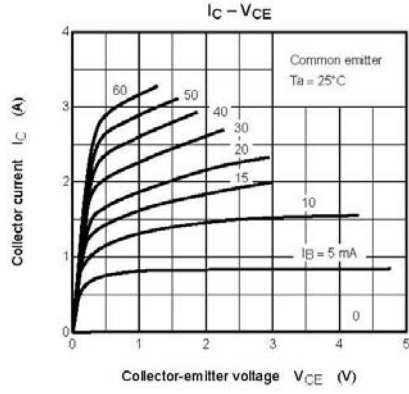
### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	80	V
Collector Emitter Voltage	$V_{CEO}$	50	V
Emitter Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	3	A
Base Current	$I_B$	0.6	A
Total Power Dissipation	$P_{tot}$	0.5 1 <sup>1)</sup>	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 55 to + 150	$^\circ\text{C}$

<sup>1)</sup> mounted on a ceramic substrate ( 250 mm<sup>2</sup> X 0.8 t)

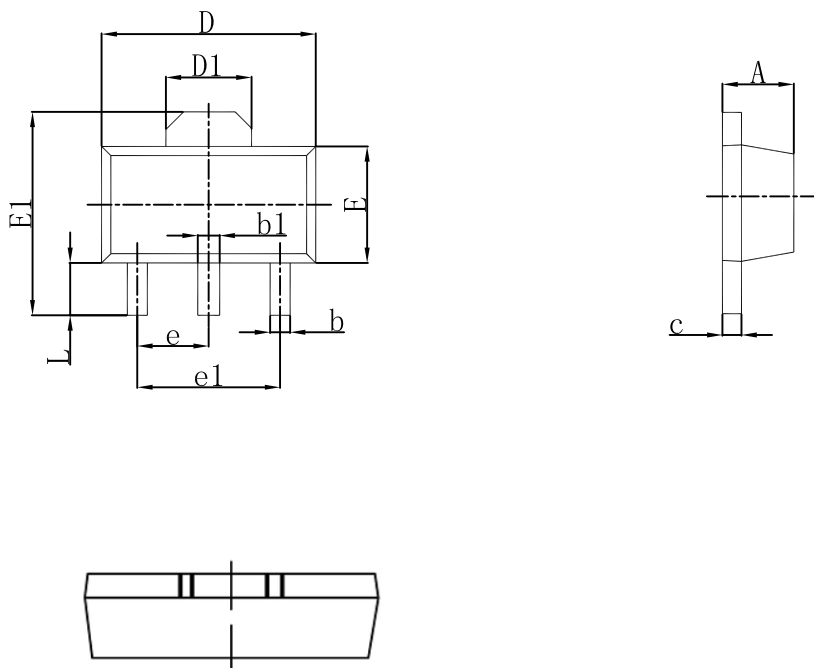
### Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE} = 2\text{ V}$ , $I_C = 100\text{ mA}$ at $V_{CE} = 2\text{ V}$ , $I_C = 2\text{ A}$	$h_{FE}$ $h_{FE}$	120 40	- -	400 -	- -
Collector Base Cutoff Current at $V_{CB} = 80\text{ V}$	$I_{CBO}$	-	-	0.1	$\mu\text{A}$
Emitter Base Cutoff Current at $V_{EB} = 6\text{ V}$	$I_{EBO}$	-	-	0.1	$\mu\text{A}$
Collector Emitter Breakdown Voltage at $I_C = 10\text{ mA}$	$V_{(BR)CEO}$	50	-	-	V
Collector Emitter Saturation Voltage at $I_C = 1.5\text{ A}$ , $I_B = 75\text{ mA}$	$V_{CE(sat)}$	-	-	0.5	V
Base Emitter Saturation Voltage at $I_C = 1.5\text{ A}$ , $I_B = 75\text{ mA}$	$V_{BE(sat)}$	-	-	1.2	V
Transition Frequency at $V_{CE} = 2\text{ V}$ , $I_C = 100\text{ mA}$	$f_T$	-	100	-	MHz
Collector Output Capacitance at $V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	20	-	pF
Turn-on Time at $V_{CC} = 30\text{ V}$ , $I_C = 1.5\text{ A}$ , $I_{B1} = -I_{B2} = 75\text{ mA}$	$t_{on}$	-	100	-	ns
Storage Time at $V_{CC} = 30\text{ V}$ , $I_C = 1.5\text{ A}$ , $I_{B1} = -I_{B2} = 75\text{ mA}$	$t_{stg}$	-	500	-	ns
Fall Time at $V_{CC} = 30\text{ V}$ , $I_C = 1.5\text{ A}$ , $I_{B1} = -I_{B2} = 75\text{ mA}$	$t_f$	-	100	-	ns





### SOT-89-3L Outlines Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047