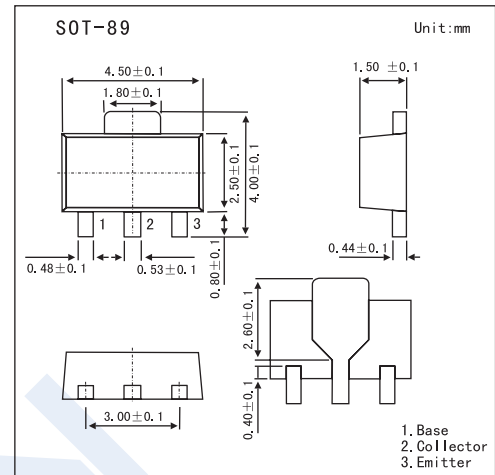


## Power Switching Applications

## 2SC4540

## ■ Features

- Low Saturation Voltage:  $V_{CE(sat)} = 0.5V$  (max) ( $I_C = 500mA$ )
- High Speed Switching Time:  $t_{stg} = 0.4\mu s$  (typ.)
- Small Flat Package
- $P_C = 1$  to  $2W$  (mounted on ceramic substrate)
- Complementary to 2SA1735

■ Absolute Maximum Ratings  $T_a = 25^\circ C$ 

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	80	V
Collector-Emitter Voltage	$V_{CEO}$	50	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	1	A
Base Current	$I_B$	0.2	A
Collector Power Dissipation	$P_C$	500	mW
	$P_{C^*}$	1000	
Junction temperature	$T_j$	150	$^\circ C$
Storage temperature Range	$T_{stg}$	-55 to +150	$^\circ C$

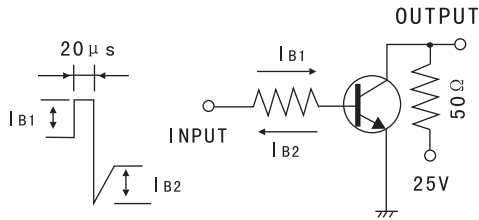
\* Mounted on ceramic substrate ( $250\text{ mm}^2 \times 0.8\text{ t}$ )

■ Electrical Characteristics  $T_a = 25^\circ C$ 

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 80V, I_E = 0$			0.1	$\mu A$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 6V, I_C = 0$			0.1	$\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10mA, I_B = 0$	50			V
DC Current Gain	$h_{FE}$	$V_{CE} = 2V, I_C = 100mA$	120		400	
		$V_{CE} = 2V, I_C = 700mA$	40			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 500mA, I_B = 25mA$			0.5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 500mA, I_B = 25mA$			1.2	V
Transition Frequency	$f_T$	$V_{CE} = 2V, I_C = 100mA$		100		MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1MHz$		10		pF
Turn-On Time	$t_{on}$	See Test Circuit.		0.1		$\mu s$
Storage Time	$t_{stg}$			0.4		
Fall Time	$t_f$			0.1		

### 2SC4540

■ Test Circuit

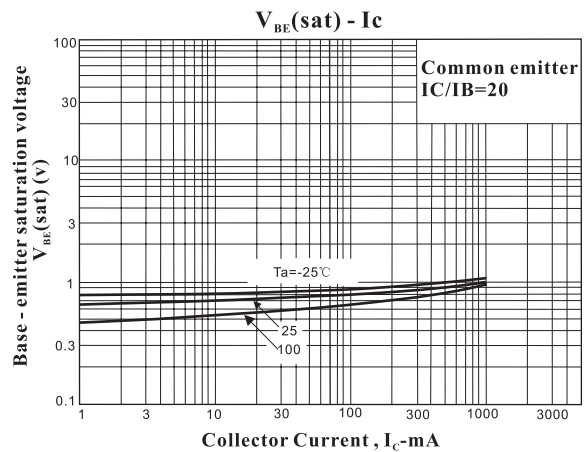
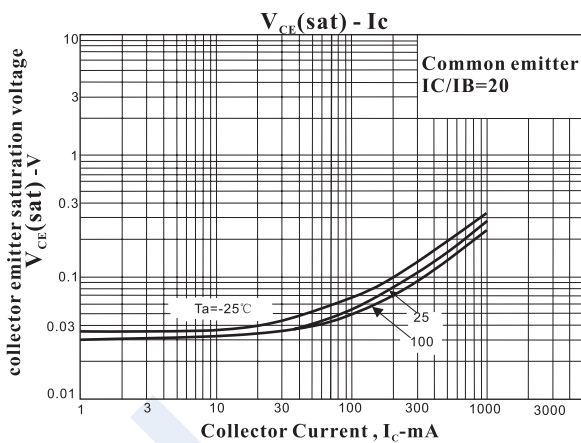
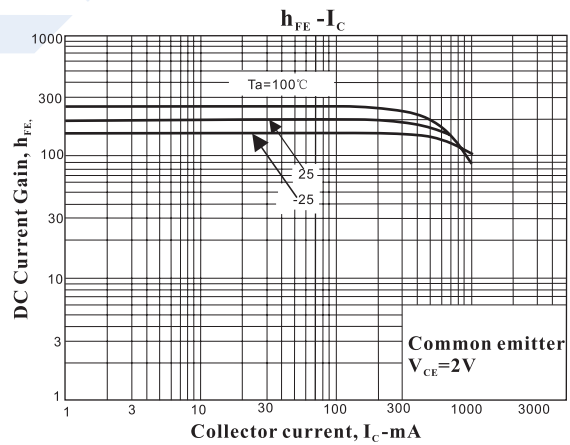
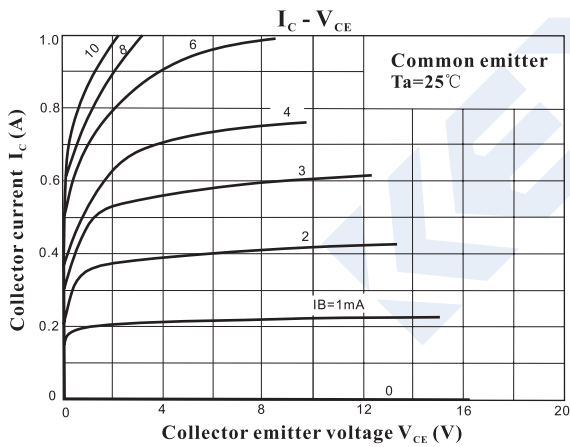


$I_{B1} = -I_{B2} = 35\text{mA}$  , DUTY CYCLE  $\leq 1\%$

■ Marking

Marking	KC
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■ Electrical Characteristics Curves



2SC4540

