

# 2SC4576

## Silicon NPN triple diffusion planar type

For high breakdown voltage high-speed switching

### Features

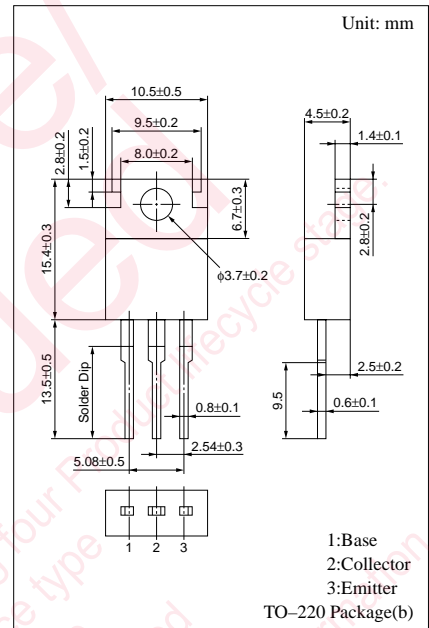
- High-speed switching
- High collector to base voltage  $V_{CBO}$
- Wide area of safe operation (ASO)
- Satisfactory linearity of forward current transfer ratio  $h_{FE}$

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

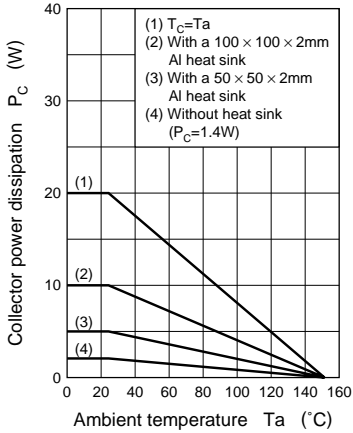
Parameter	Symbol	Ratings	Unit	
Collector to base voltage	$V_{CBO}$	1400	V	
Collector to emitter voltage	$V_{CER}$	1400	V	
	$V_{CEO}$	700	V	
Emitter to base voltage	$V_{EBO}$	5	V	
Peak collector current	$I_{CP}$	1.0	A	
Collector current	$I_C$	0.3	A	
Collector power dissipation	$P_C$	$T_C=25^\circ\text{C}$	20	W
		$T_a=25^\circ\text{C}$	1.4	
Junction temperature	$T_j$	150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$	

### Electrical Characteristics ( $T_C=25^\circ\text{C}$ )

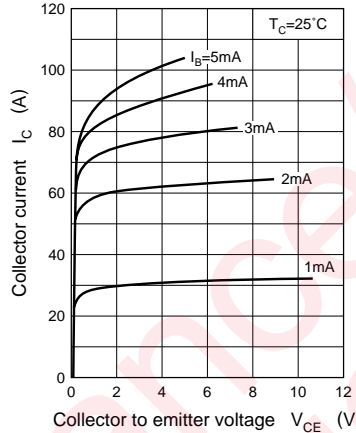
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 1100\text{V}, I_E = 0$			10	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 4\text{V}, I_C = 0$			10	$\mu\text{A}$
Collector to emitter voltage	$V_{CEO}$	$I_C = 1\text{mA}, I_B = 0$	700			V
	$V_{CER}$	$I_C = 1\text{mA}, R_{BE} = 100\Omega$	1400			V
Emitter to base voltage	$V_{EBO}$	$I_E = 1\text{mA}, I_C = 0$	5			V
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 5\text{V}, I_C = 30\text{mA}$	10		40	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 60\text{mA}, I_B = 6\text{mA}$			2	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 60\text{mA}, I_B = 6\text{mA}$			2	V
Transition frequency	$f_T$	$V_{CE} = 10\text{V}, I_C = 30\text{mA}, f = 1\text{MHz}$		12		MHz
Turn-on time	$t_{on}$	$I_C = 150\text{mA},$ $I_{B1} = 15\text{mA}, I_{B2} = -30\text{mA},$ $V_{CC} = 250\text{V}$			2	$\mu\text{s}$
Storage time	$t_{stg}$				3	$\mu\text{s}$
Fall time	$t_f$				1	$\mu\text{s}$



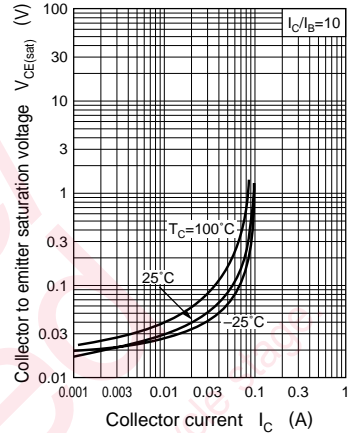
$P_C - T_a$



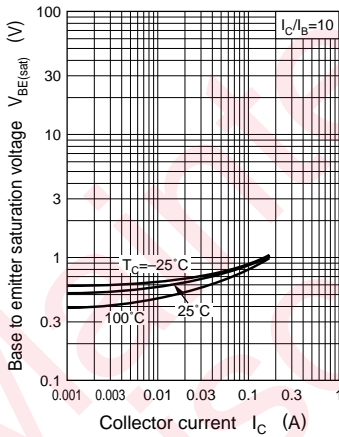
$I_C - V_{CE}$



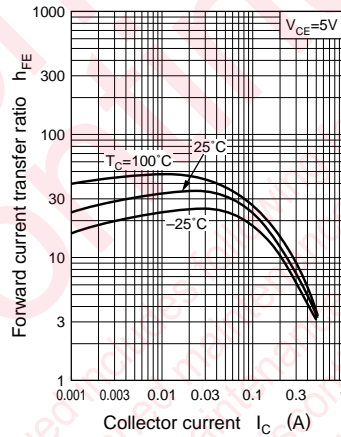
$V_{CE(sat)} - I_C$



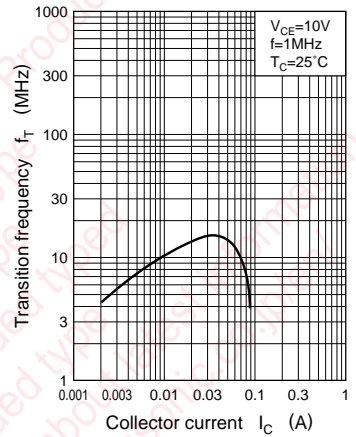
$V_{BE(sat)} - I_C$



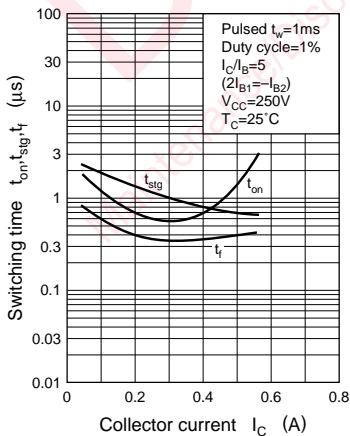
$h_{FE} - I_C$



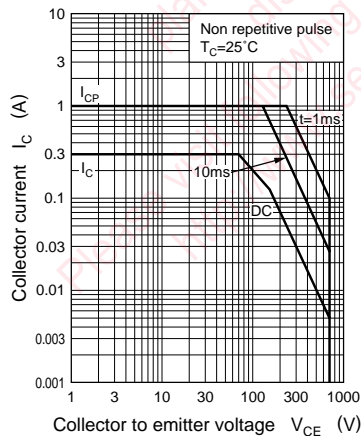
$f_T - I_C$



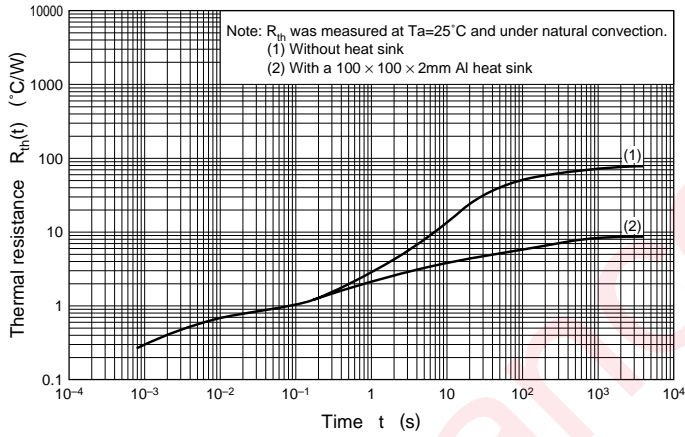
$t_{on}, t_{stg}, t_f - I_C$



Area of safe operation (ASO)



$$R_{th(t)} \text{ --- } t$$



Maintenance/Discontinued includes following four Product lifecycle stage.  
 Discontinued  
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 maintenance type  
 planned discontinued type  
 discontinued type  
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