

# 2SC4301

Silicon NPN Triple Diffused Planar Transistor (High Voltage Switching Transistor) Application : Switching Regulator, Lighting Inverter and General Purpose

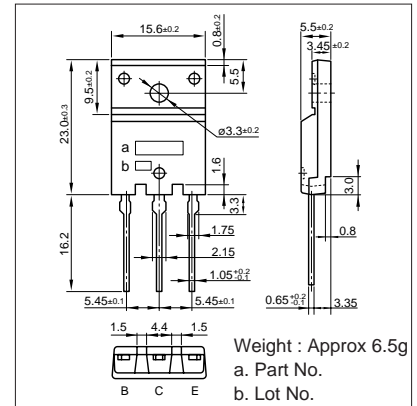
### Absolute maximum ratings (Ta=25°C)

Symbol	Ratings	Unit
V <sub>CB0</sub>	900	V
V <sub>CE0</sub>	800	V
V <sub>EB0</sub>	7	V
I <sub>C</sub>	7(Pulse14)	A
I <sub>B</sub>	3.5	A
P <sub>C</sub>	80(Tc=25°C)	W
T <sub>J</sub>	150	°C
T <sub>stg</sub>	-55 to +150	°C

### Electrical Characteristics (Ta=25°C)

Symbol	Conditions	Ratings	Unit
I <sub>CB0</sub>	V <sub>CB</sub> =800V	100max	μA
I <sub>EB0</sub>	V <sub>EB</sub> =7V	100max	μA
V <sub>(BR)CEO</sub>	I <sub>C</sub> =10mA	800min	V
h <sub>FE</sub>	V <sub>CE</sub> =4V, I <sub>C</sub> =3A	10 to 30	
V <sub>CE(sat)</sub>	I <sub>C</sub> =3A, I <sub>B</sub> =0.6A	0.5max	V
V <sub>BE(sat)</sub>	I <sub>C</sub> =3A, I <sub>B</sub> =0.6A	1.2max	V
f <sub>r</sub>	V <sub>CE</sub> =12V, I <sub>E</sub> =-1A	6typ	MHZ
C <sub>OB</sub>	V <sub>CB</sub> =10V, f=1MHZ	105typ	pF

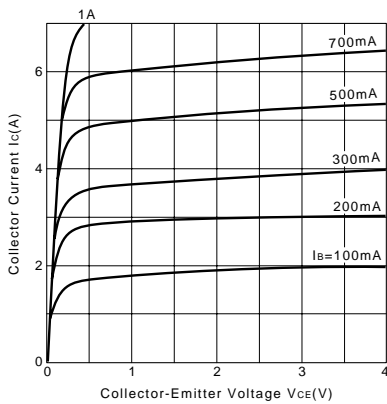
### External Dimensions FM100(TO3PF)



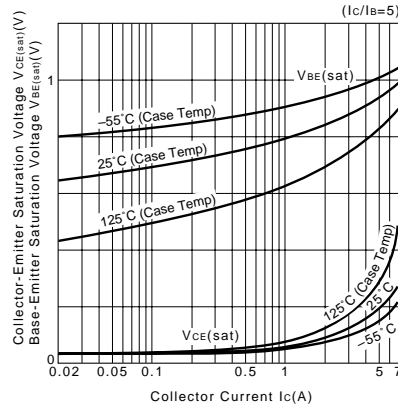
### Typical Switching Characteristics (Common Emitter)

V <sub>CC</sub> (V)	R <sub>L</sub> (Ω)	I <sub>C</sub> (A)	V <sub>BB1</sub> (V)	V <sub>BB2</sub> (V)	I <sub>B1</sub> (A)	I <sub>B2</sub> (A)	t <sub>on</sub> (μs)	t <sub>stg</sub> (μs)	t <sub>f</sub> (μs)
250	83	3	10	-5	0.45	-1.5	1max	5max	1max

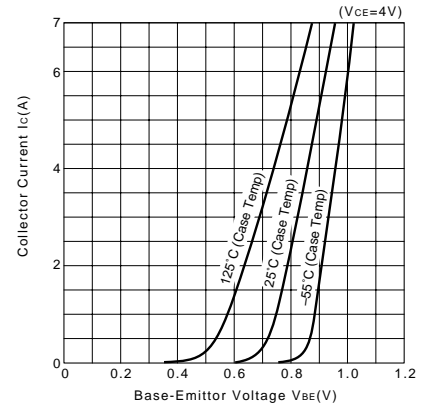
I<sub>C</sub>-V<sub>CE</sub> Characteristics (Typical)



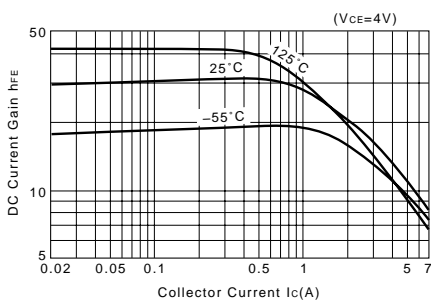
V<sub>CE(sat)</sub>, V<sub>BE(sat)</sub>-I<sub>C</sub> Temperature Characteristics (Typical)



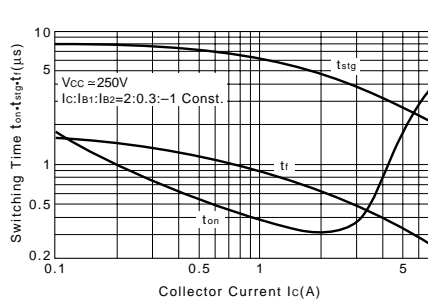
I<sub>C</sub>-V<sub>BE</sub> Temperature Characteristics (Typical)



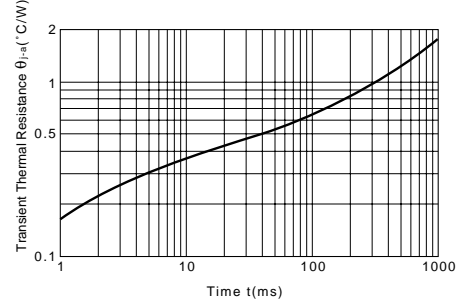
h<sub>FE</sub>-I<sub>C</sub> Characteristics (Typical)



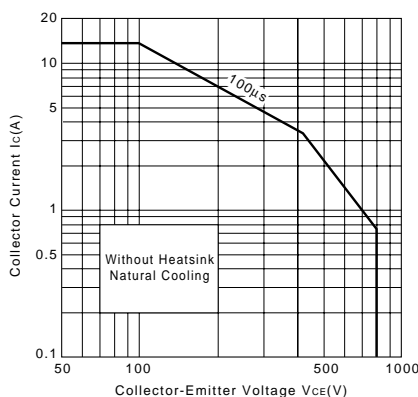
t<sub>on</sub>•t<sub>stg</sub>•t<sub>r</sub>-I<sub>C</sub> Characteristics (Typical)



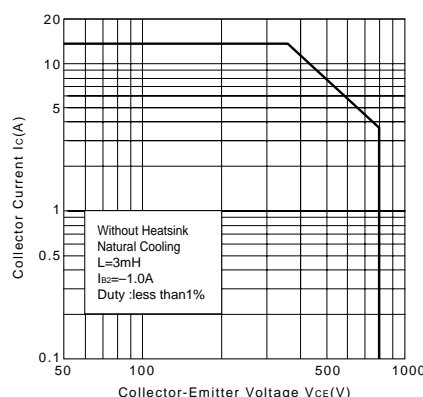
θ<sub>j-a</sub>-t Characteristics



Safe Operating Area (Single Pulse)



Reverse Bias Safe Operating Area



P<sub>C</sub>-T<sub>a</sub> Derating

