

# 2SC4138

Silicon NPN Triple Diffused Planar Transistor (High Voltage and High Speed Switching Transistor)

Application : Switching Regulator and General Purpose

## Absolute maximum ratings (Ta=25°C)

Symbol	Ratings	Unit
VCBO	500	V
VCEO	400	V
VEBO	10	V
IC	10(Pulse20)	A
IB	4	A
PC	80(Tc=25°C)	W
Tj	150	°C
Tstg	-55 to +150	°C

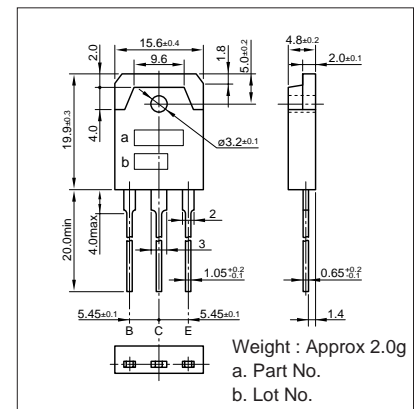
## Electrical Characteristics (Ta=25°C)

Symbol	Conditions	Ratings	Unit
ICBO	VCB=500V	100max	μA
IEBO	VEB=10V	100max	μA
V(BR)CEO	IC=25mA	400min	V
hFE	VCE=4V, IC=6A	10 to 30	
VCE(sat)	IC=6A, IB=1.2A	0.5max	V
VBE(sat)	IC=6A, IB=1.2A	1.3max	V
fT	VCE=12V, IE=-0.7A	10typ	MHz
COB	VCB=10V, f=1MHz	85typ	pF

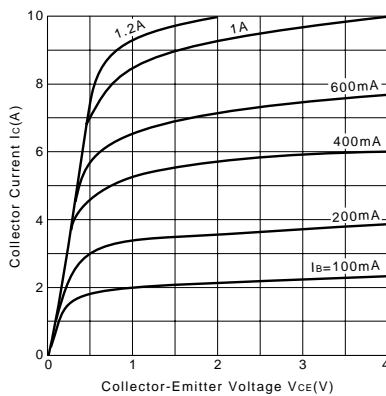
## Typical Switching Characteristics (Common Emitter)

VCC (V)	RL (Ω)	IC (A)	VBB1 (V)	VBB2 (V)	IB1 (A)	IB2 (A)	ton (μs)	tstg (μs)	tf (μs)
200	33.3	6	10	-5	0.6	-1.2	1max	3max	0.5max

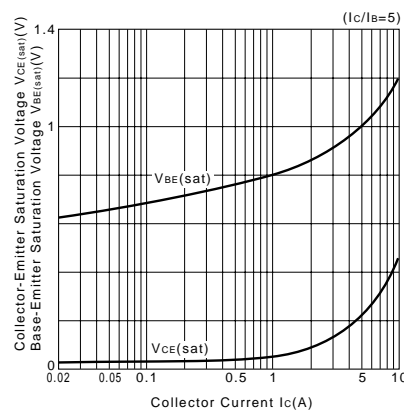
## External Dimensions MT-100(TO3P)



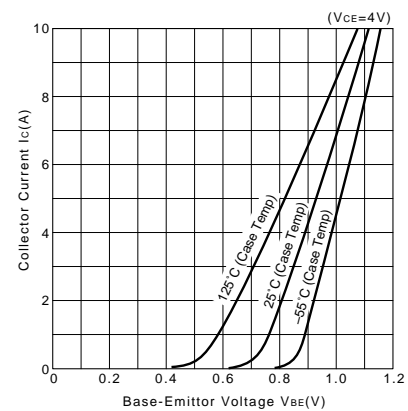
IC-VCE Characteristics (Typical)



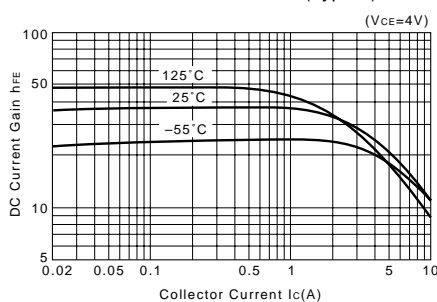
VCE(sat), VBE(sat)-IC Temperature Characteristics (Typical)



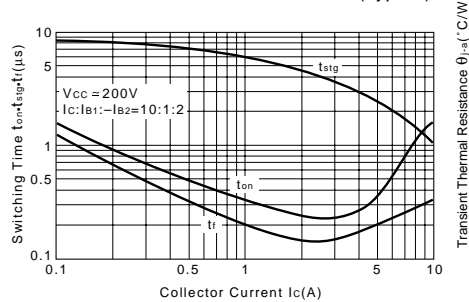
IC-VBE Temperature Characteristics (Typical)



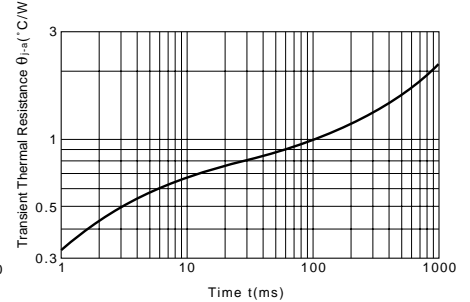
hFE-IC Characteristics (Typical)



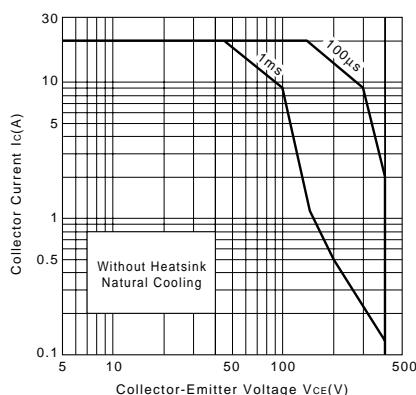
ton, tstg, tr-IC Characteristics (Typical)



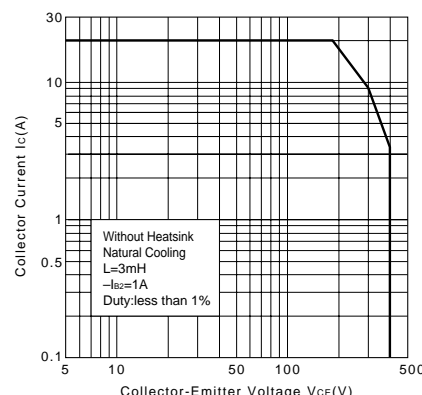
θja-t Characteristics



Safe Operating Area (Single Pulse)



Reverse Bias Safe Operating Area



PC-Ta Derating

