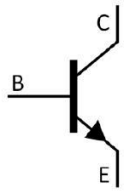
Silicon NPN transistor in a TO-220 Plastic Package.

low collector saturation voltage, fast switching speed, wide base reverse-bias SOA.

High-speed high-voltage converters, and high-frequency power amplifiers.

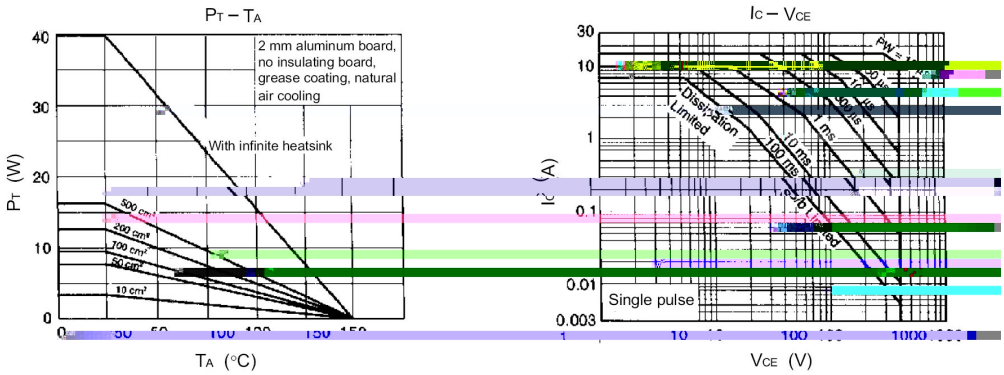


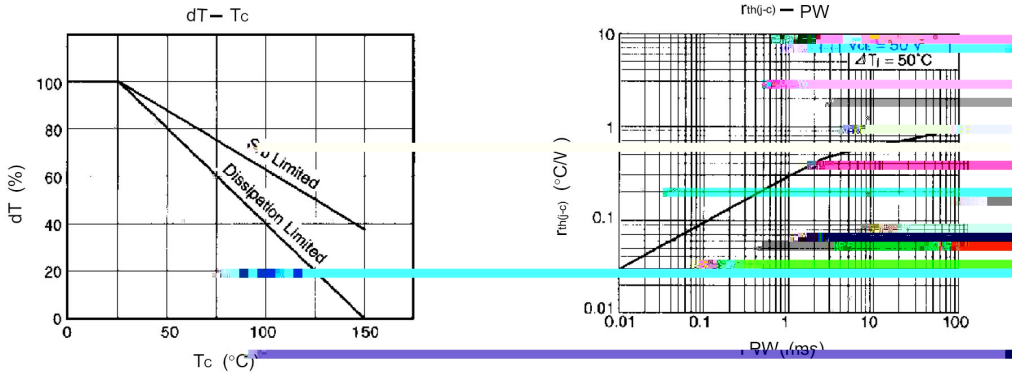
PIN1 Base PIN 2 Collector PIN 3 Emitter

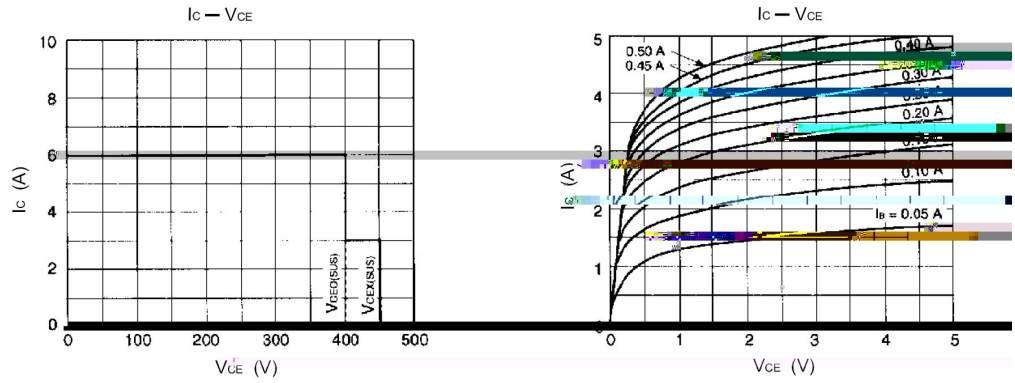
See Marking Instructions.

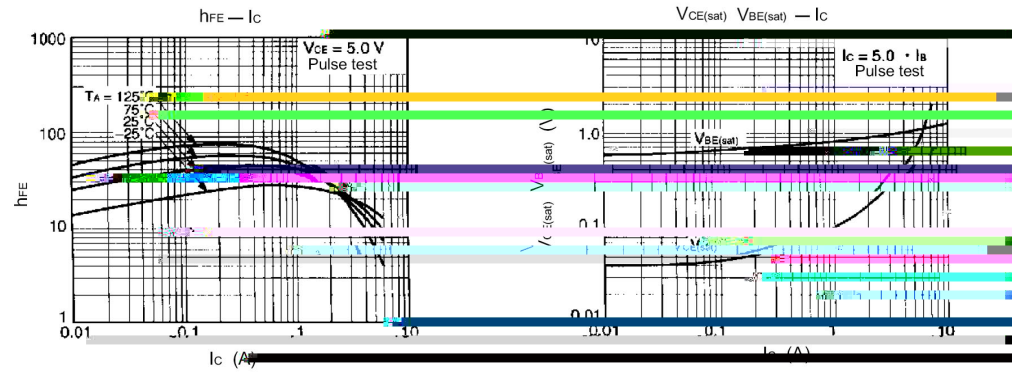
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	500	V
Collector to Emitter Voltage	V_{CEO}	400	V
Emitter to Base Voltage	V_{EBO}	7.0	V
Collector Current - Continuous	I_C	7.0	A
Base Current - Continuous	I_B	3.5	A
Collector Power Dissipation	P_C	1.5	W
	P_C(Tc=25)	40	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

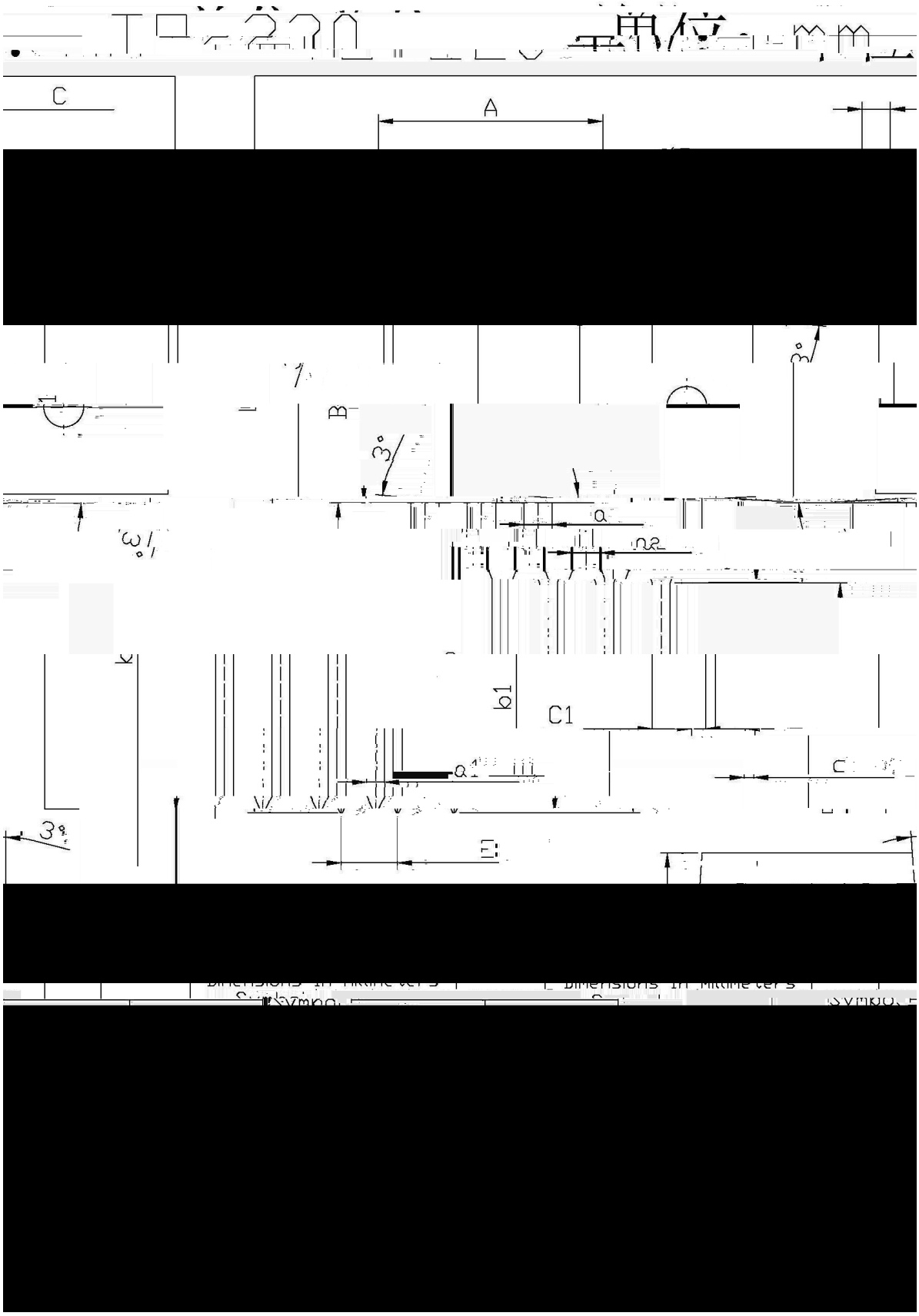
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	V_{CEO}	I_C=3A I_{B1}=0.6A L=1mH	400			V
Collector to Emitter Breakdown Voltage	$V_{CEX(SUS)1}$	I_C=3A I_{B1}=-I_{B2}=0.6A $V_{BE(OFF)}$=-5V L=180 H	450			V
	$V_{CEX(SUS)2}$	I_C=6A I_{B1}=2A -I_{B2}=0.6A $V_{BE(OFF)}$=-5V L=180 H	400			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=400V I_E=0			1.0	A
Collector Cut-Off Current	I_{CER}	V_{CE}=400V R_{BE}=51 T_A=125			1.0	mA
Collector Cut-Off Current	I_{CEX1}	V_{CE}=400V $R_{BE(OFF)}$=-1.5V			10	A
	I_{CEX2}	V_{CE}=400V R_{BE}=-1.5V T_A=125			1.0	mA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=5V I_C=0			10	A
DC Current Gain	$h_{FE(1)}$	V_{CE}=5V I_C=0.1A	20		80	
	$h_{FE(2)}$	V_{CE}=5V I_C=1A	20		80	
	$h_{FE(3)}$	V_{CE}=5V I_C=3A	10			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=3A I_B=0.6A			1.0	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=3A I_B=0.6A			1.2	V
Turn-On Time	t_{on}	I_C=3A R_L=50 I_{B1}=-I_{B2}=0.6A V_{CC}=150V Refer to the test circuit			1.0	S
Storage Time	t_{stg}				2.5	S
Fall Time	t_r				1.0	S

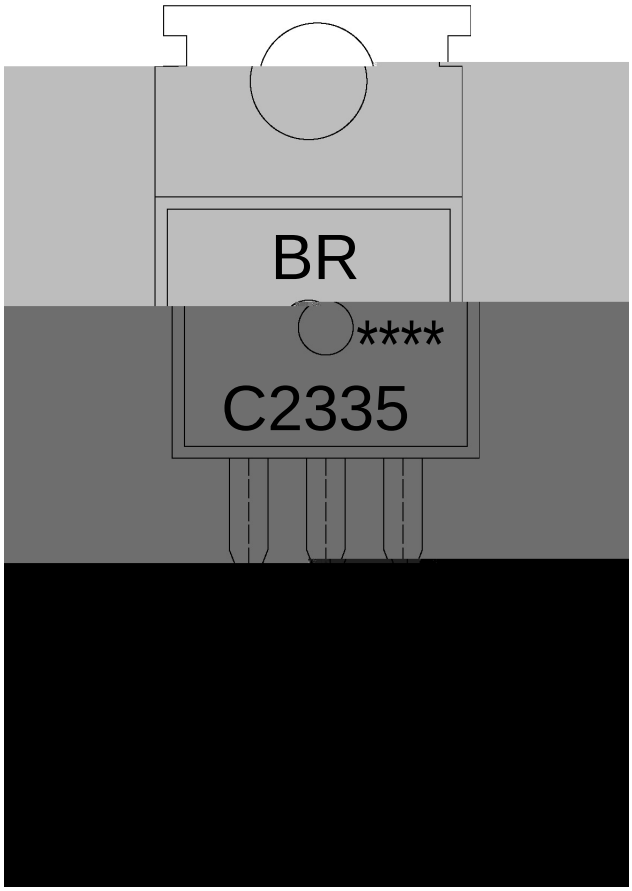

PT – TA
2 mm aluminum board, no insulating board, grease coating, natural air cooling
With infinite heatsink
500 cm²
200 cm²
100 cm²
50 cm²
10 cm²
PT (W)
TA (°C)
IC – VCE
Dissipation Limited
10 ms
100 ms
1 s
Single pulse
IC (A)
VCE (V)


dT – TC
Dissipation Limited
dT (%)
TC (°C)
rth(j-c) – PW
ΔTj = 50°C
rth(j-c) (°C/W)
PW (ms)


IC – VCE
VCEO(SUS)
VCEX(SUS)
IC (A)
VCE (V)
IC – VCE
0.50 A
0.45 A
0.40 A
0.30 A
0.20 A
0.10 A
IB = 0.05 A
IC (A)
VCE (V)


hFE – IC
VCE = 5.0 V
Pulse test
TA = 125°C
75°C
25°C
-25°C
hFE
IC (A)
VCE(sat) VBE(sat) – IC
IC = 5.0 • IB
Pulse test
VBE(sat)
VCE(sat)
IC (A)


C
A
B
3°
3°
3°
a
n2
b1
C1
a1
C
k
L1



BR

C2335

Note:

BR:	Company Code
C2335:	Product Type.
****:	Lot No. Code, code change with Lot No.