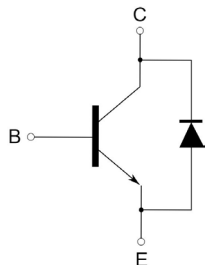


Power Transistor

Fast Switching

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RoHS
Compliant



Applications

- Energy-Saving Light
- Electronics Ballasts
- High Frequency Switching Power Supply
- High Frequency Power Transform and Commonly Power Amplifier

Features

- This product is available in AEC-Q101 Compliant and PPAP Capable also.

Absolute Maximum Ratings (Ta = 25°C Unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector Emitter Voltage	V _{CES}	800	V
Collector Emitter Voltage	V _{CEO}	450	
Emitter Base Voltage	V _{EBO}	9	
Collector Current (DC)	I _C	2	A
Collector Current (Pulse)	I _{CP}	4	
Base Current (DC)	I _B	1	
Base Current (Pulse)	I _{BP}	2	
Total Dissipation	P _C	50	W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55 to +150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction to Case	R _{th(j-c)}	2.5	°C/W

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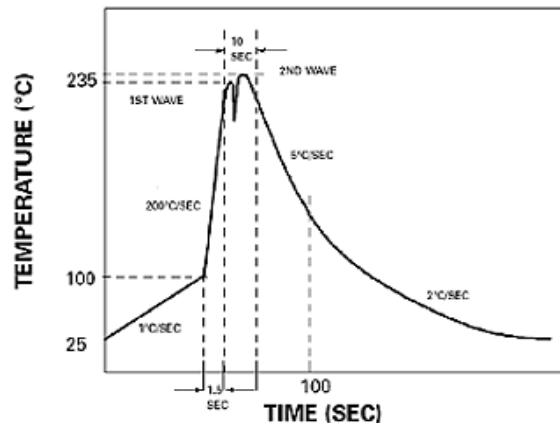
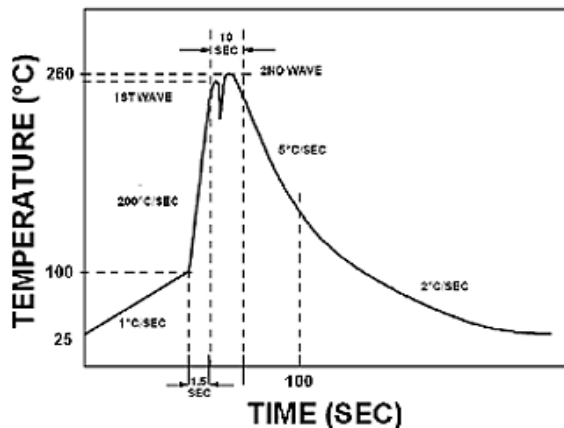
Reflow profiles in tabular form

Profile Feature	Sn-Pb System	Pb-Free System
Average Ramp-Up Rate	~3°C/second	~3°C/second
Preheat – Temperature Range – Time	150-170°C 60-180 seconds	150-200°C 60-180 seconds
Time maintained above: – Temperature – Time	200°C 30-50 seconds	217°C 60-150 seconds
Peak Temperature	235°C	260°C max.
Time within +0 -5°C of actual Peak	10 seconds	40 seconds
Ramp-Down Rate	3°C/second max.	6°C/second max.

Recommended Wave Solder Profiles

The Recommended solder Profile For Devices with Pb-free terminal plating where a Pb-free solder is used

The Recommended solder Profile For Devices with Pb-free terminal plating used with leaded solder, or for devices with leaded terminal plating used with leaded solder



Wave Profiles in Tabular Form

Profile Feature	Sn-Pb System	Pb-Free System
Average Ramp-Up Rate	~200°C/second	~200°C/second
Heating rate during preheat	Typical 1-2, Max 4°C/sec	Typical 1-2, Max 4°C/Sec
Final preheat Temperature	Within 125°C of Solder Temp	Within 125°C of Solder Temp
Peak Temperature	235°C	260°C max.
Time within +0 -5°C of actual Peak	10 seconds	10 seconds
Ramp-Down Rate	5°C/second max.	5°C/second max.

Power Transistor Fast Switching

Typical Characteristic Curves

Fig 1: Collector current v/s Collector Emitter Voltage

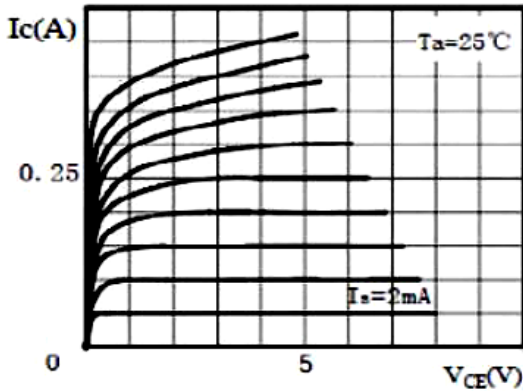


Fig 2: Collector emitter saturation voltage v/s Collector current

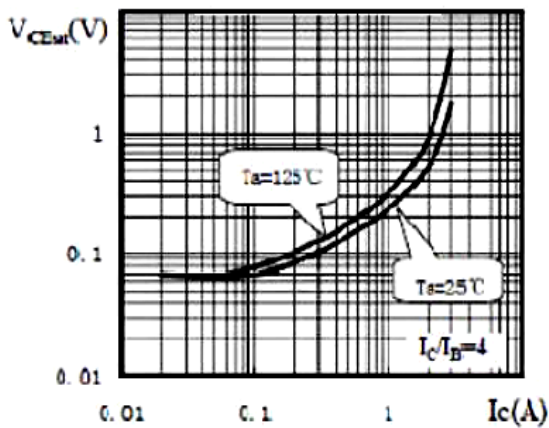


Fig 3: Power(%) v/s temperature

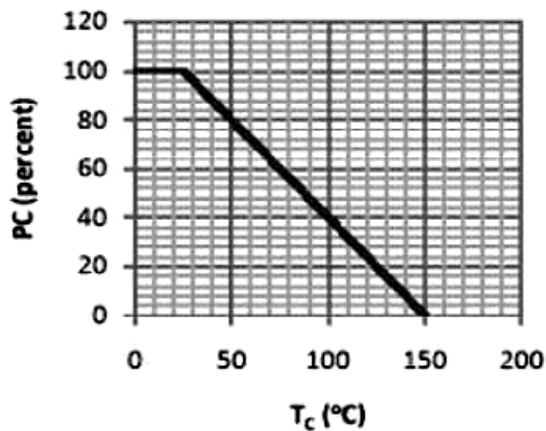


Fig 4: DC gain v/s Collector Current

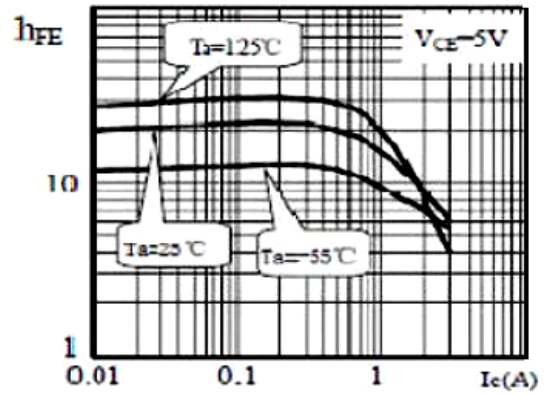


Fig 5: Base Emitter saturation voltage v/s collector current

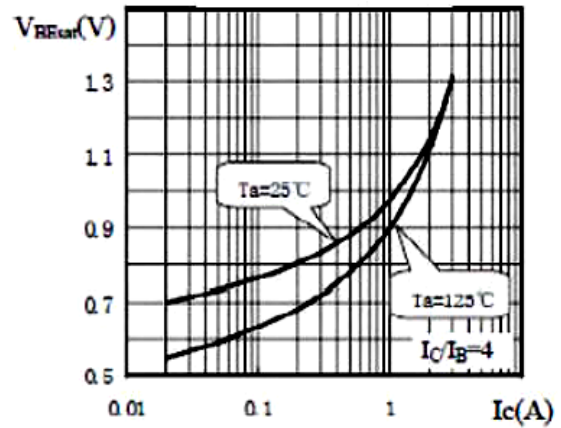
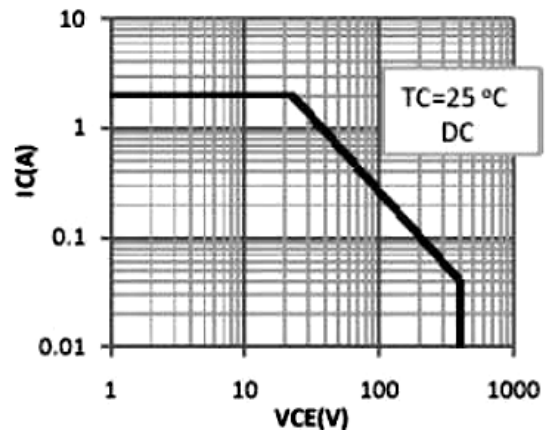


Fig 6: Safe operating Area

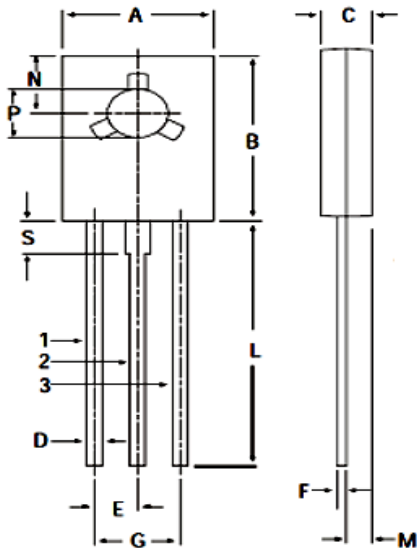


Power Transistor Fast Switching

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Dimensions

TO-126 Leaded Plastic Package



DIM	MIN.	MAX.
A	7.4	7.8
B	10.5	10.8
C	2.4	2.7
D	0.7	0.9
E	2.25 TYP	
F	0.49	0.75
G	4.5 TYP	
L	15.7 TYP	
M	1.27 TYP	
N	3.75 TYP	
P	3	3.2
S	2.5 TYP	

Dimensions : Millimetres

Part Number Table

Description	Part Number
Power Transistor, Fast Switching, NPN, TO-126	CD148D

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