



炬鹿科技有限公司  
RIDEE TECH COMPANY LIMITED

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# APPROVAL SHEET

Product Name : Power Resistor

Part No. : TWP20,TWP30H,TWP35H,TWP50,TWP100H

Description : TO220 20W, 30W, 35W, 50W  
TO247 100W

炬鹿科技有限公司

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For more contact information, please refer to our website: [www.rideetech.com](http://www.rideetech.com)

### TO-220 Power Resistor - TWP 20 series

#### ■ Features

- 20 watts at 25°C case temperature heat sink mounted
- TO-220 style power package
- Molded case for protection and easy to mount
- Electrically isolated case
- Non-Inductive design



#### ■ Applications

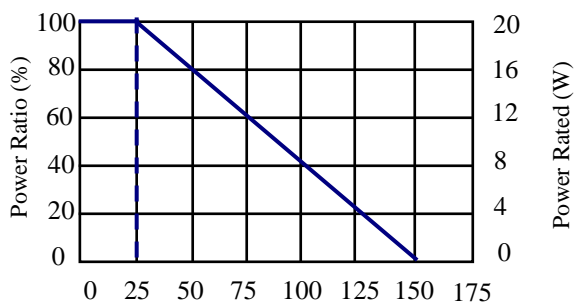
- High Speed Switching Power Supplies
- Snubbers Circuits
- Load Resistor for Pulse Generators
- Voltage Regulation
- VHF Amplifiers

#### ■ Construction

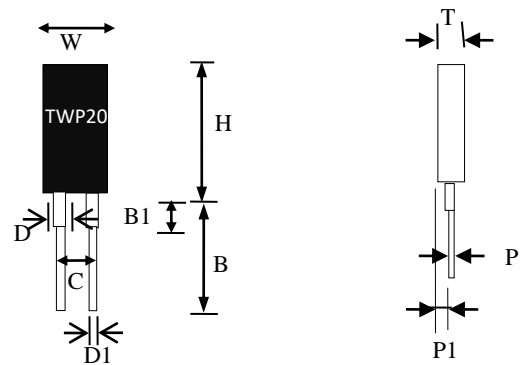


①	Radiator Fin	③	Lead
②	Alumina Substrate	④	Molding

#### ■ Derating Curve



底板中心溫度(°C)



#### ■ Dimensions (Unit: mm)

型號	W	H	B	B1	C	D	D1	T	P	P1
TWP20	10.41 ±0.26	16.26 ±0.26	12.70 ±1.27	3.3 ±0.76	5.08 ±0.26	1.27 ±0.13	0.86 ±0.1	3.18 ±0.26	0.55 ±0.1	1.78 ±0.26

### Part Numbering

TWP	20	J	B	D	1001
Product Type	Power	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Resistance
	20=20 Watts	D: ±0.5% F: ±1% J: ±5% K: ±10%	B: Bulk	D: ±50 E: ±100 F: ±200 G: ±300 -: No Specified	R100: 0.1Ω 0100: 10Ω 4700: 470Ω 1001: 1KΩ 1002: 10KΩ

### Electrical Characteristics Specifications

Item Type	Resistance Range				TCR (PPM/°C)
	±0.5%	±1%	±5%	±10%	
TWP 20	-	-	0.05Ω-1Ω		No Specified
	-	>1Ω-3Ω			±300
	-	>3Ω-10Ω			±100、±200
	>10Ω-10KΩ				±50、±100、±200
	>10KΩ-1MΩ				±100、±200

- Operating Voltage : 350V Max ;
- Dielectric Strength : 1,800VAC ;
- Insulation Resistance : 10GΩ min .
- Working Temperature Range : -65°C to +150°C ;

### Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	Referenced to 25°C, ΔR taken at +105°C
Short Time Overload	ΔR±0.3%	2 times rated power with applied voltage not to exceed 1.5 times Maximum continuous operating voltage for 5 seconds
Load Life	ΔR±1.0%	2,000 hours at rated power
Damp Heat with Load	ΔR±0.5%	40±2°C, 90~95% R.H. Max. working voltage for 1,000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Solderability	90% min. Coverage	245±5°C for 3±5 seconds
Terminal Shock	ΔR±0.3%	-65°C~150°C, 100 cycles
Terminal Strength	ΔR±0.2%	(Pull Test)2.4N
Vibration, High Frequency	ΔR±0.2%	20g peak

- Lead Material: Tinned Copper
- Without a Heat Sink,.
- When in Free Air at 25°C, the TR20 is Rated for 3W
- The Case Temperature is to be used for the Definition of the Applied Power Limit
- The Case Temperature Measurement must be made with a Thermocouple Contacting the Center of the Component mounted on the Designed Heat Sink.
- Thermal Grease should be Applied Properly.

### TO-220 Power Resistor -TWP30H series

#### ■ Features

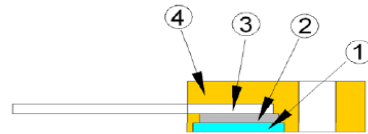
- 30 watts at 25°C case temperature heat sink mounted
- TO-220 style power package
- Single screw mounting to heat sink
- Molded case for protection and easy to mount
- Electrically isolated case
- Non-Inductive design
- 



#### ■ Applications

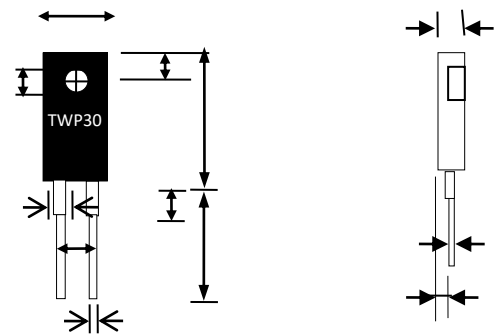
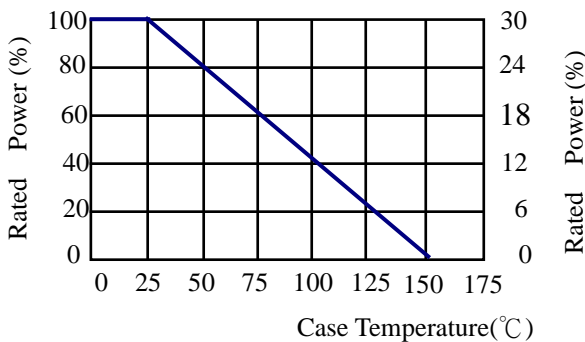
- Gate Resistors in Power Supplies
- Snubbers
- Load and Dumping in Resistors in CRT Monitors
- Automated Machine Controller
- Terminal Resistance in RF Power Amplifiers
- Voltage Regulation
- Low Energy Pulse Loading
- UPS

#### ■ Construction



①	Alumina Substrate	③	Lead
②	Resistor Layer	④	Molding

#### ■ Derating Curve



#### ■ Dimensions

型號	W	H	H1	B	B1	C	D	D1	L	T	P	P1
TWP30H	10.41 ±0.26	16.26 ±0.26	3.18 ±0.26	12.70 ±1.27	3.3 ±0.76	5.08 ±0.26	1.27 ±0.13	0.86 ±0.1	3.18 ±0.1	3.18 ±0.26	0.55 ±0.1	1.78 ±0.26

### ■ Part Numbering

<b>TWP</b>	<b>30H</b>	<b>J</b>	<b>B</b>	<b>D</b>	<b>1001</b>
Product Type	Power	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Resistance
	30H=30 Watts (Hole)	D: ±0.5% F: ±1% J: ±5% K: ±10%	B: Bulk	D: ± 50 E: ± 100 F: ± 200 G: ± 300 -: No Specified	R100: 0.1Ω 0100: 10Ω 4700: 470Ω 1001: 1KΩ 1002: 10KΩ

### ■ Electrical Characteristics Specifications

Type	Item	Resistance Range				TCR (PPM/°C)
		±0.5%	±1%	±5%	±10%	
TWP30H	-	-	0.05Ω-1Ω		No Specified	
	-	>1Ω-3Ω			±300	
	-	>3Ω-10Ω			±100 · ±200	
	>10Ω-10KΩ			±50 · ±100 · ±200		
	>10KΩ-1MΩ			±200 · ±300		

- Operating Voltage : 420V Max ;
- Dielectric Strength : 1,800VAC ;
- Insulation Resistance : 10GΩ min °
- Working Temperature Range : -65°C to +150°C ;

### ■ Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	Referenced to 25°C, ΔR taken at +105°C
Short Time Overload	ΔR±0.3%	2times rated power with applied voltage not to exceed 1.5 times Maximum continuous operating voltage for 5 seconds
Load Life	ΔR±1.0%	2,000 hours at rated power
Damp Heat with Load	ΔR±0.5%	40±2°C, 90~95% R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Solderability	90% min. Coverage	245±5°C for 3 seconds
Terminal Shock	ΔR±0.3%	-65°C~150°C, 100 cycles
Terminal Strength	ΔR±0.2%	(Pull Test)2.4N
Vibration, High Frequency	ΔR±0.2%	20g peak

- Lead Material: Tinned Copper
- Maximum Torque: 0.9 N-m
- When in Free Air at 25°C, the PRT30 is Rated for 2.25W
- The Case Temperature is to be used for the Definition of the Applied Power Limit
- The Case Temperature Measurement must be made with a Thermocouple Contacting the Center of the Component mounted on the Designed Heat Sink.
- Thermal Grease should be Applied Properly.

### TO-220 Power Resistor - TWP35H series

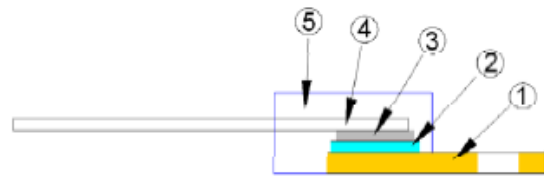
#### ■ Features

- 35 watts at 25°C case temperature heat sink mounted
- TO-220 style power package
- Single screw mounting to heat sink
- Molded case for protection and easy to mount
- Electrically isolated case
- Non-Inductive design

#### ■ Applications

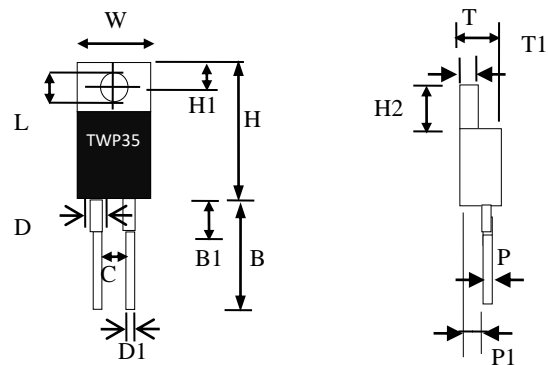
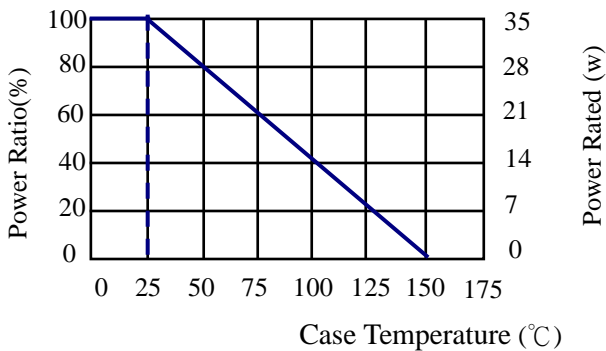
- Switching Power Supplies
- Snubbers Circuits
- Automated Machine Controller
- RF Power Amplifiers.
- Low Energy Pulse Loading
- UPS
- Voltage Regulation

#### ■ Construction



①	Radiator Fin	④	Copper Lead
②	Alumina Substrate	⑤	Molding
③	Resistor Layer		

#### ■ Derating Curve



#### ■ Dimensions (Unit: mm)

型號	W	H	H1	B	B1	D	D1	L	C	T	T1	H2	P	P1
TWP35H	10.16 ±0.25	14.75 ±0.25	2.85 ±0.2	13.7 ±1.0	4 MAX	1.27 ±0.1	0.78 ±0.08	3.75 ±0.2	5.08 ±0.25	4.44 ±0.38	1.3 ±0.1	6.1 ±0.25	0.55 ±0.15	2.285 ±0.235

### ■ Part Numbering

TWP	35H	J	B	D	1001
Product Type	Power	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Resistance
	35H=35 Watts (Hole)	D: ±0.5% F: ±1% J: ±5% K: ±10%	B: Bulk	D: ±50 E: ±100 F: ±200 G: ±300 -: No Specified	R100: 0.1Ω 0100: 10Ω 4700: 470Ω 1001: 1KΩ 1002: 10KΩ

### ■ Electrical Characteristics Specification

Item Type	Resistance Range				TCR (PPM/°C)
	±0.5%	±1%	±5%	±10%	
TWP35H	-	-	0.1Ω-1Ω		No Specified
	-	>1Ω-3Ω			±300
	-	>3Ω-10Ω			±100、±200
	>10Ω-10KΩ				±50、±100、±200

- Operating Voltage : 350V Max ;
- Dielectric Strength : 1,800VAC ;
- Insulation Resistance : 10GΩ min °
- Working Temperature Range : -65°C to +150°C ;

### ■ Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	Referenced to25°C ,ΔR taken at +105°C
Short Time Overload	ΔR±0.3%	2times rated power with applied voltage not to exceed 1.5 times Maximum continuous operating voltage for 5 seconds
Load Life	ΔR±1.0%	2,000 hours at rated power
Damp Heat with Load	ΔR±0.5%	40±2°C, 90~95% R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Solderability	90% min. Coverage	245±5°C for 3 seconds
Terminal Shock	ΔR±0.3%	-65°C~150°C, 100 cycles
Terminal Strength	ΔR±0.2%	(Pull Test)2.4N
Vibration,High Frequency	ΔR±0.2%	20g peak

■Lead Material: Tinned Copper

■Maximum Torque:0.9 Nm

■Without a Heat Sink,. When IN Free Air at 25°C, the PRT35 is Rated for 2.5W

■The Case Temperature is to be used for the Definition of the Applied Power Limit

■The Case Temperature Measurement must be made with a Thermocouple Contacting the Center of the Component mounted on the Designed Heat Sink.

■Thermal Grease should be Applied Properly.

### TO-220 Power Resistor-TWP 50 series

#### ■ Features

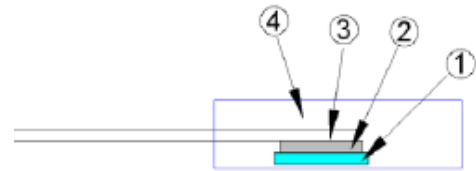
- 50 watts at 25°C case temperature heat sink mounted
- TO-220 style power package
- Molded case for protection and easy to mount
- Electrically isolated case
- Non-Inductive design



#### ■ Applications

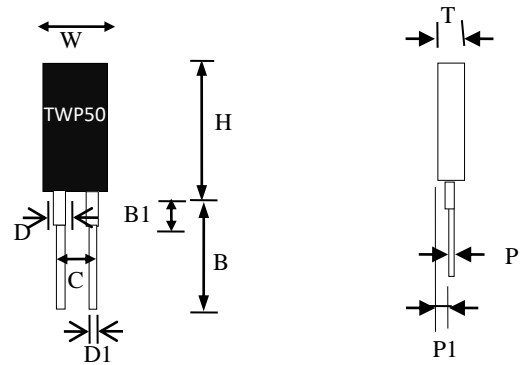
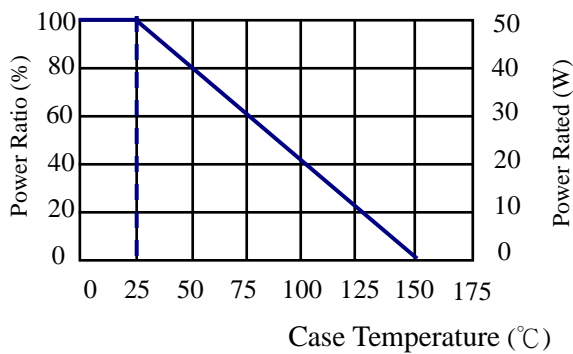
- Switching Power Supplies
- Non-inductive Design for High Frequency
- Pulsing Applications
- UPS
- Voltage Regulation

#### ■ Construction



①	Radiator Fin	③	Lead
②	Alumina Substrate	④	Molding

#### ■ Derating Curve



#### ■ Dimensions (Unit: mm)

Type	W	H	B	B1	C	D	D1	T	P	P1
TWP50	10.41 ±0.26	16.26 ±0.26	12.70 ±1.27	3.3 ±0.76	5.08 ±0.26	1.27 ±0.13	0.86 ±0.1	3.18 ±0.26	0.55 ±0.1	1.78 ±0.26



### ■ Part Numbering

<b>TWP</b>	<b>50</b>	<b>J</b>	<b>B</b>	<b>D</b>	<b>1001</b>
Product Type	Power	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Resistance
	50=50 Watts	D: ±0.5% F: ±1% J: ±5% K: ±10%	B: Bulk	D: ±50 E: ±100 F: ±200 G: ±300 -: No Specified	R100: 0.1Ω 0100: 10Ω 4700: 470Ω 1001: 1KΩ 1002: 10KΩ

### ■ Electrical Characteristics Specifications

Item Type	Resistance Range				TCR (PPM/°C)
	±0.5%	±1%	±5%	±10%	
TWP 50	-	-	0.1Ω-1Ω		No Specified
	-	>1Ω-3Ω			±300
	-	>3Ω-10Ω			±100、±200
	>10Ω-10KΩ				±50、±100、±200
	>10KΩ-1MΩ				±200、±300

- Operating Voltage : 350V Max ;
- Dielectric Strength : 1,800VAC ;
- Insulation Resistance : 10GΩ min °
- Working Temperature Range : -65°C to +150°C ;

### ■ Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	Referenced to25°C ,ΔR taken at +105°C
Short Time Overload	ΔR±0.3%	2times rated power with applied voltage not to exceed 1.5 times Maximum continuous operating voltage for 5 seconds
Load Life	ΔR±1.0%	2,000 hours at rated power
Damp Heat with Load	ΔR±0.5%	40±2°C, 90~95% R.H. Max. working voltage for 1,000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Solderability	90% min. Coverage	245±5°C for 3±5 seconds
Terminal Shock	ΔR±0.3%	-65°C~+150°C, 100 cycles
Terminal Strength	ΔR±0.2%	(Pull Test)2.4N
Vibration, High Frequency	ΔR±0.2%	20g peak

- Lead Material: Tinned Copper
- Without a Heat Sink,.
- When in Free Air at 25°C, the PRT50 is Rated for 3W
- The Case Temperature is to be used for the Definition of the Applied Power Limit
- The Case Temperature Measurement must be made with a Thermocouple Contacting the Center of the Component mounted on the Designed Heat Sink.
- Thermal Grease should be Applied Properly.

### TO-247 Power Resistor-TWP100H series

#### ■ Features

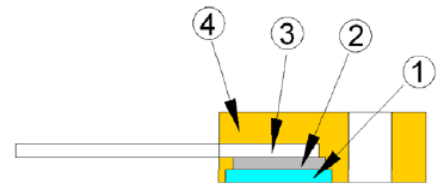
- 100 Wats at 25°C case temperature heat sink mounted
- TO-247 style power package
- Single M3 screw mounting to heat sink
- Molded case for protection and easy to mount
- Electrically isolated case
- Non-Inductive design



#### ■ Application

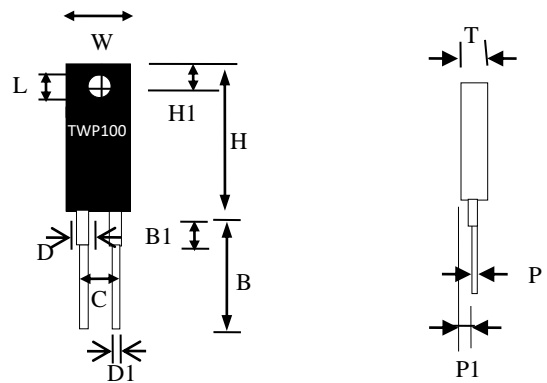
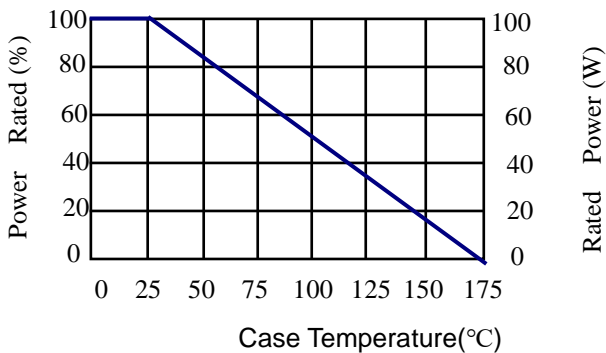
- Gate Resistors in Power Supplies
- Snubbers
- Load and Dumping Resistors in CRT Monitors
- Terminal Resistance in RF Power Amplifier
- Voltage Regulation/UPS
- Low Energy Pulse loading

#### ■ Construction



①	Alumina Substrate	③	Lead
②	Resistor Layer	④	Molding

#### ■ Derating Curve



#### ■ Dimension (Unit: mm)

Type	W	H	H1	B	B1	D	D1	L	C	T	P	P1
TWP100H	15.75 ±0.26	20.7 ±0.26	5.33 ±0.26	14.48 ±1.27	2.79 ±0.76	3.63 ±0.18	1.52 ±0.1	3.63 ±0.1	10.16 ±0.26	4.95 ±0.26	0.81 ±0.26	2.41 ±0.26

### Part Numbering

<b>TWP</b>	<b>100H</b>	<b>J</b>	<b>B</b>	<b>D</b>	<b>1001</b>
Product Type	Power	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Resistance
	100H=100Watts (Hole)	F: ±1% J: ±5% K: ±10%	B: Bulk	D: ±50 E: ±100 F: ±200 G: ±300 -:No Specified	R100: 0.1Ω 0100: 10Ω 4700: 470Ω 1001: 1KΩ 1002: 10KΩ

### Electrical Characteristics Specifications

Item Type	Resistance Range			TCR (PPM/°C)
	±1%	±5%	±10%	
TWP100H	-	0.2Ω-1Ω		No Specified
		>1Ω-3Ω		±300
		>3Ω-10Ω		±100、±200
		>10Ω-10KΩ		±50、±100、±200
		>10KΩ-1MΩ		±200、±300

- Operating Voltage : 700V Max ;
- Dielectric Strength : 1,800VAC ;
- Insulation Resistor : 10GΩ min .
- Working Temperature Range : -65°C to +175°C ;

### Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec..	Referenced to25°C,+ΔR taken at +105°C
Load Life	ΔR±1.0%	Rated power,2,000 hours
Solderability	90%min. coverage	245±5°C for 3 seconds
Momentary Overload	ΔR±0.3%	1.5 times rated power and V(dc)≤1.5V Max.. for 5 seconds
Dielectric strength	ΔR±0.15%	1,800V AC,60 seconds
Moisture resistance	ΔR±0.5%	-10°C~+65°C, RH>90% cycle 240 hours
Thermal Shock	ΔR±0.3%	-65°C~150°C, 100 cycles
Terminal Strength	ΔR±0.2%	(Pull Test)2.4N
Vibration, High Frequency	ΔR±0.2%	20g peak

- Lead Material : Tinned Copper
- Maximum Torque : 0.9Nm
- When in Free Air at 25°C · the PRT100 is Rated for 3.5W
- The case Temperature is to be used for the Definition of the Applied Power Limit
- The case Temperature Measurement must be made with a Thermocouple Contacting of the Component mounted on the Designed Heat Sink
- Thermal Grease should be Applied Properly.