

Description

The FMW-4304 is a 40 V, 30 A Schottky diode with allowing improvements in V_F characteristic. These characteristic features contribute to improving power supply efficiency and to enabling high-frequency systems.

Features

- V_{RSM} ----- 40 V
- $I_{F(AV)}$ ----- 30 A
- V_F ($I_F = 15\text{ A}$) ----- 0.51 V typ.
- Bare Lead Frame: Pb-free (RoHS Compliant)
- Flammability: Equivalent to UL94V-0

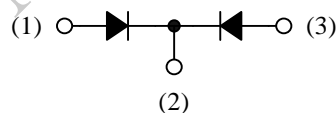
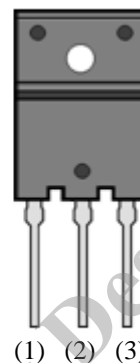
Applications

High speed switching applications as follows:

- DC-DC Converter
- Adapter

Package

TO3PF-3L



- (1) Anode
- (2) Cathode
- (3) Anode

Not to scale

Absolute Maximum Ratings

Unless otherwise specified, $T_A = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Conditions	Rating	Unit
Nonrepetitive Peak Reverse Voltage	V_{RSM}		40	V
Repetitive Peak Reverse Voltage	V_{RM}		40	V
Average Forward Current	$I_{F(AV)}$	See Figure 1 and Figure 2	30	A
Surge Forward Current	I_{FSM}	Half cycle sine wave, positive side, 10 ms, 1 shot	150	A
I^2t Limiting Value	I^2t	$1\text{ ms} \leq t \leq 10\text{ ms}$	112.5	A^2s
Junction Temperature	T_J		-40 to 150	$^\circ\text{C}$
Storage Temperature	T_{STG}		-40 to 150	$^\circ\text{C}$

Electrical Characteristics

Unless otherwise specified, $T_A = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage Drop ⁽¹⁾	V_F	$I_F = 15\text{ A}$	—	0.51	0.55	V
Reverse Leakage Current ⁽¹⁾	I_R	$V_R = V_{RM}$	—	—	1.5	mA
Reverse Leakage Current under High Temperature ⁽¹⁾	$H \cdot I_R$	$V_R = V_{RM}, T_J = 150\text{ }^\circ\text{C}$	—	—	500	mA
Thermal Resistance ⁽²⁾	$R_{th(J-C)}$		—	—	2.0	$^\circ\text{C/W}$

Mechanical Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Unit
Heatsink Mounting Screw Torque		0.686	—	0.882	$\text{N}\cdot\text{m}$

⁽¹⁾ The rating of one chip.

⁽²⁾ $R_{th(J-C)}$ is thermal resistance between junction and the case. The case temperature is measured at the back side near the screw hole.

Rating and Characteristic Curves

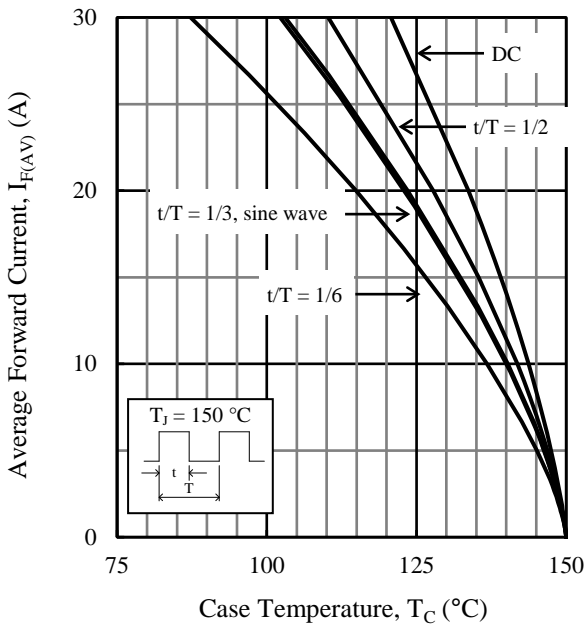


Figure 1. Typical Characteristics: $I_{F(AV)}$ vs. T_C ($V_R = 0\text{ V}$)

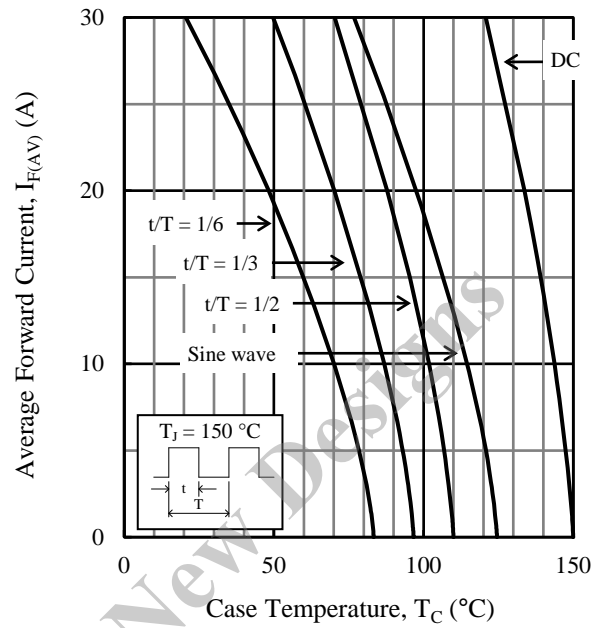


Figure 2. Typical Characteristics: $I_{F(AV)}$ vs. T_C ($V_R = 40\text{ V}$)

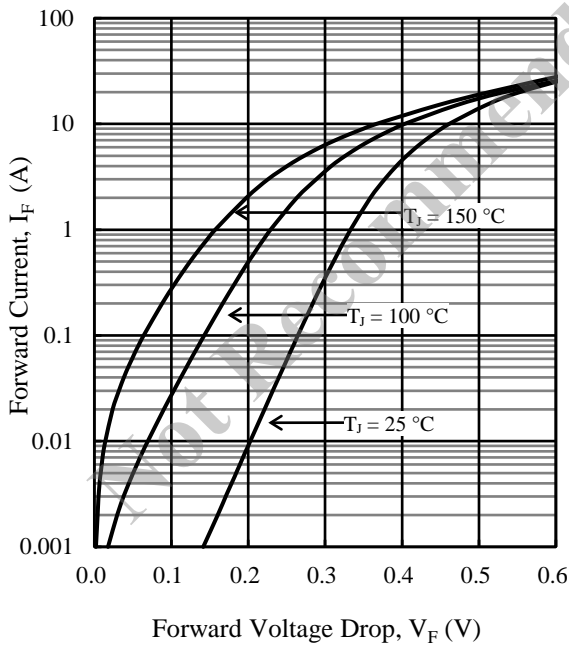


Figure 3. Typical Characteristics: I_F vs. V_F

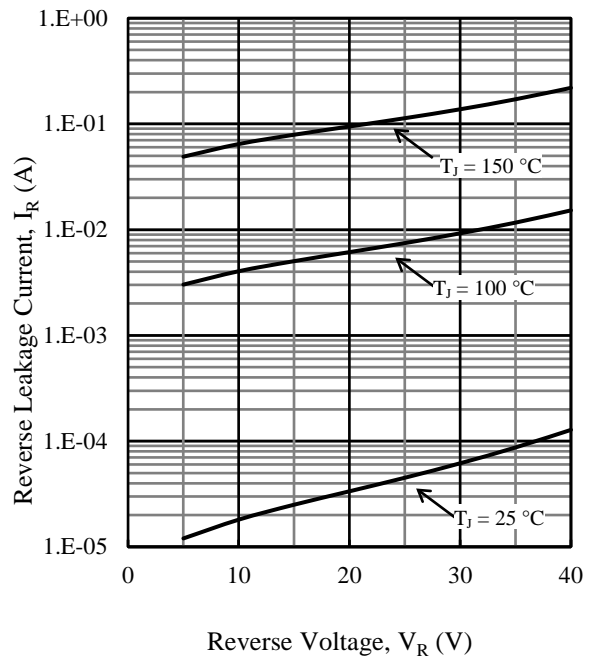
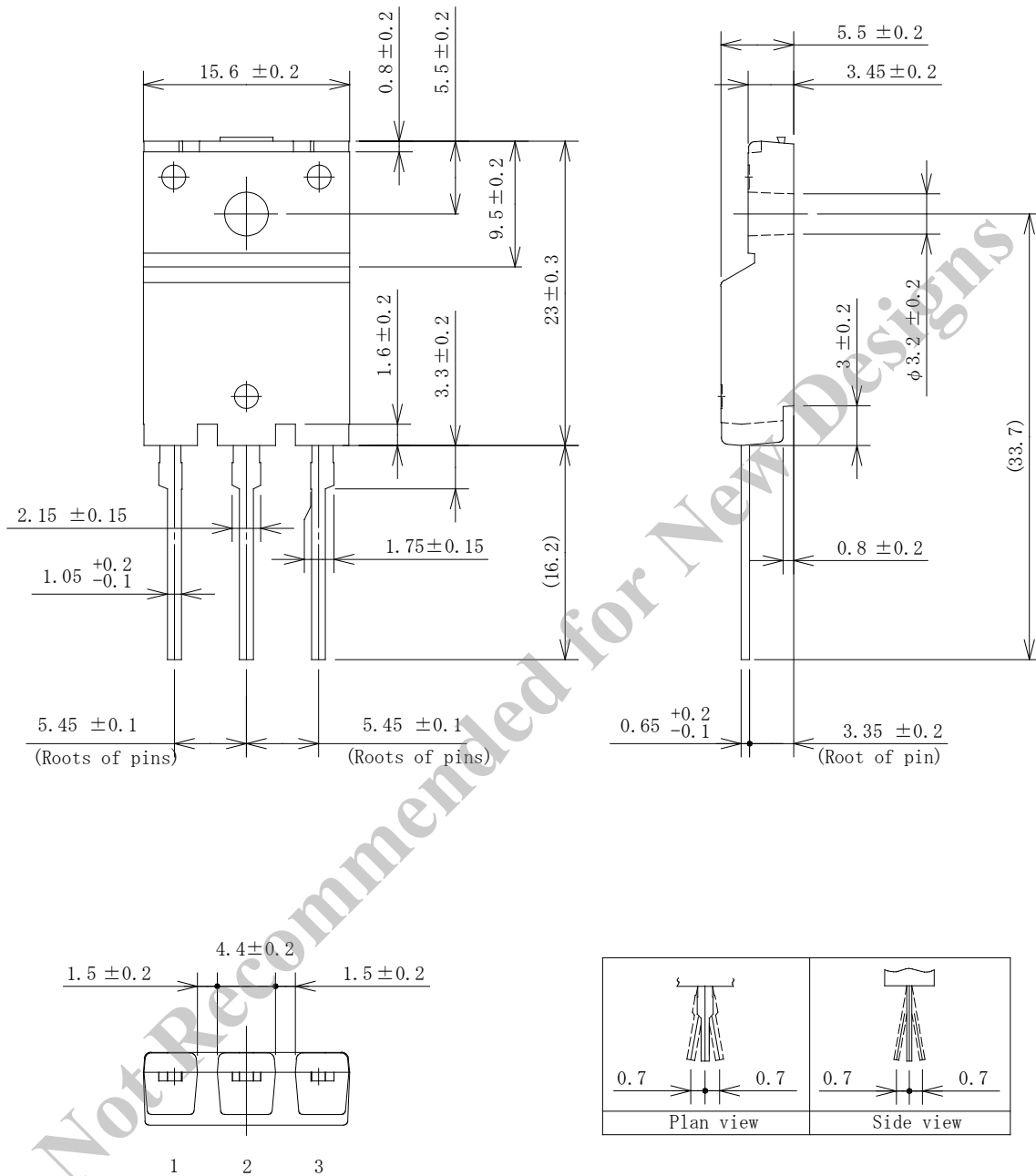


Figure 4. Typical Characteristics: I_R vs. V_R

Physical Dimensions

• TO3PF-3L



NOTES:

- Dimensions in millimeters
- Maximum gate burr height is 0.3 mm.
- Bare lead frame: Pb-free (RoHS compliant)
- When soldering the products, it is required to minimize the working time within the following limits:
 Flow: 260 ± 5 °C / 10 ± 1 s, 2 times
 Soldering Iron: 380 ± 10 °C / 3.5 ± 0.5 s, 1 time
 Soldering should be at a distance of at least 1.5 mm from the body of the product.
- Recommended screw torque for TO3PF: 0.686 N·m to 0.882 N·m (7 kgf·cm to 9 kgf·cm)

Marking Diagram

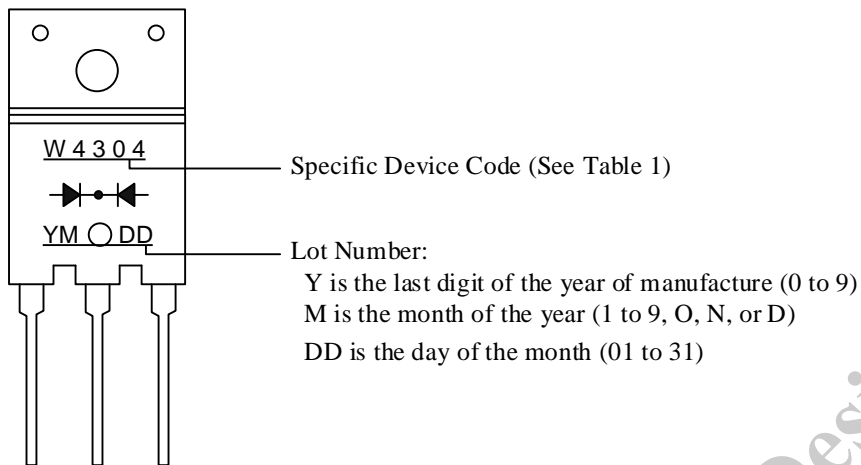


Table 1. Specific Device Code

Specific Device Code	Part Number
W4304	FMW-4304

Not Recommended for New Designs

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DSGN-CEZ-16003