

FML-G12S

Absolute Maximum Ratings

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

Parameter	Symbol	Conditions	Rating	Unit
Nonrepetitive Peak Reverse Voltage	V_{RSM}		200	V
Repetitive Peak Reverse Voltage	V_{RM}		200	V
Average Forward Current	$I_{\text{F(AV)}}$	See Figure 1 and Figure 2	5	A
Surge Forward Current	I_{FSM}	Half cycle sine wave, positive side, 10 ms, 1 shot	65	A
I^2t Limiting Value	I^2t	$1\text{ ms} \leq t \leq 10\text{ ms}$	21	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	V_F	$T_J = 25\text{ }^{\circ}\text{C}$, $I_F = 5\text{ A}$	—	—	0.98	V
		$T_J = 100\text{ }^{\circ}\text{C}$, $I_F = 5\text{ A}$	—	0.78	—	V
Reverse Leakage Current	I_R	$V_R = V_{\text{RM}}$	—	—	100	μA
Reverse Leakage Current under High Temperature	$H \cdot I_R$	$V_R = V_{\text{RM}}$, $T_J = 150\text{ }^{\circ}\text{C}$	—	—	200	μA
Reverse Recovery Time	t_{rr1}	$I_F = I_{\text{RP}} = 100\text{ mA}$, 90% recovery point, $T_J = 25\text{ }^{\circ}\text{C}$	—	—	40	ns
	t_{rr2}	$I_F = 100\text{ mA}$, $I_{\text{RP}} = 200\text{ mA}$, 75% recovery point, $T_J = 25\text{ }^{\circ}\text{C}$	—	—	30	ns
Thermal Resistance ⁽¹⁾	$R_{\text{th(J-C)}}$		—	—	4.0	$^{\circ}\text{C/W}$

Mechanical Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Unit
Heatsink Mounting Screw Torque		0.490	—	0.686	$\text{N}\cdot\text{m}$

⁽¹⁾ $R_{\text{th(J-C)}}$ 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

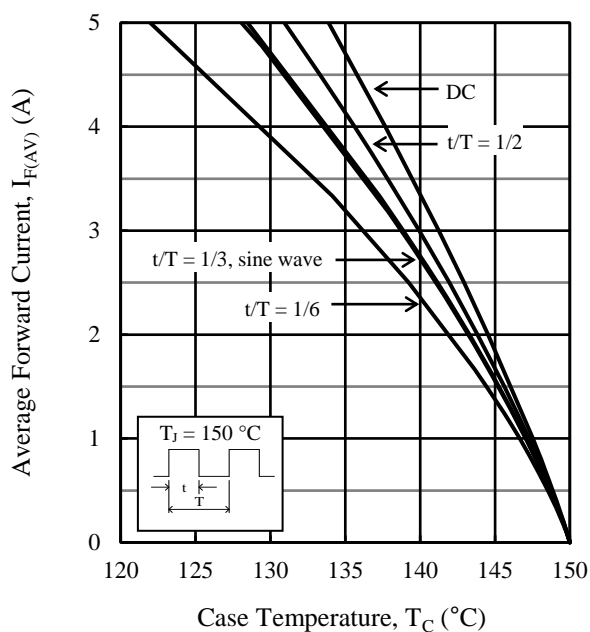


Figure 1. Typical Characteristics: $I_{F(AV)}$ vs. T_C
($V_R = 0$ V)

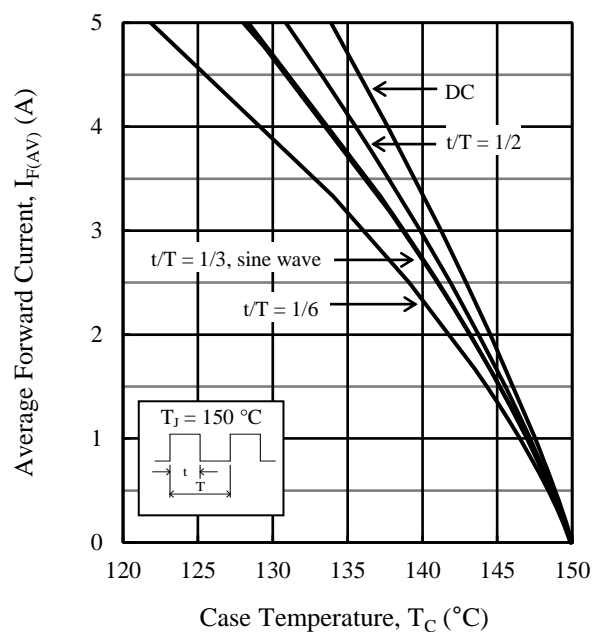


Figure 2. Typical Characteristics: $I_{F(AV)}$ vs. T_C
($V_R = 200$ V)

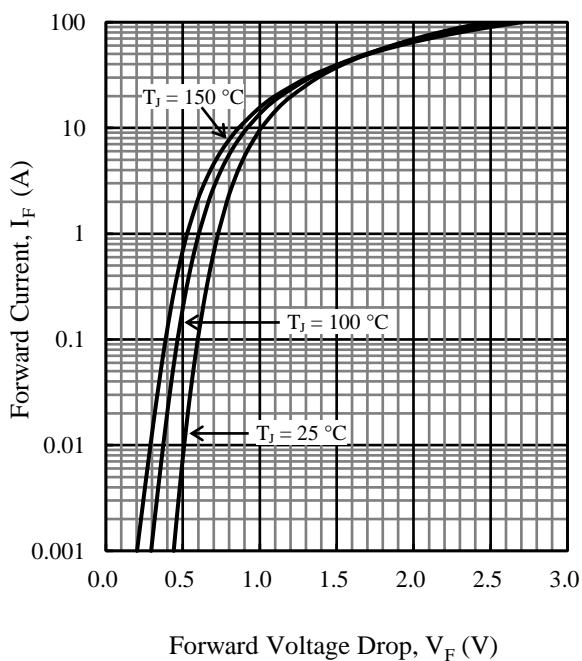


Figure 3. Typical Characteristics: V_F vs. I_F

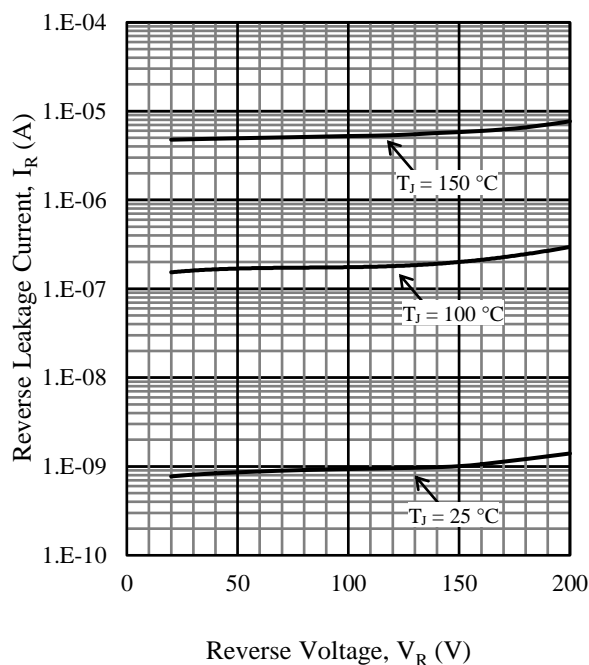
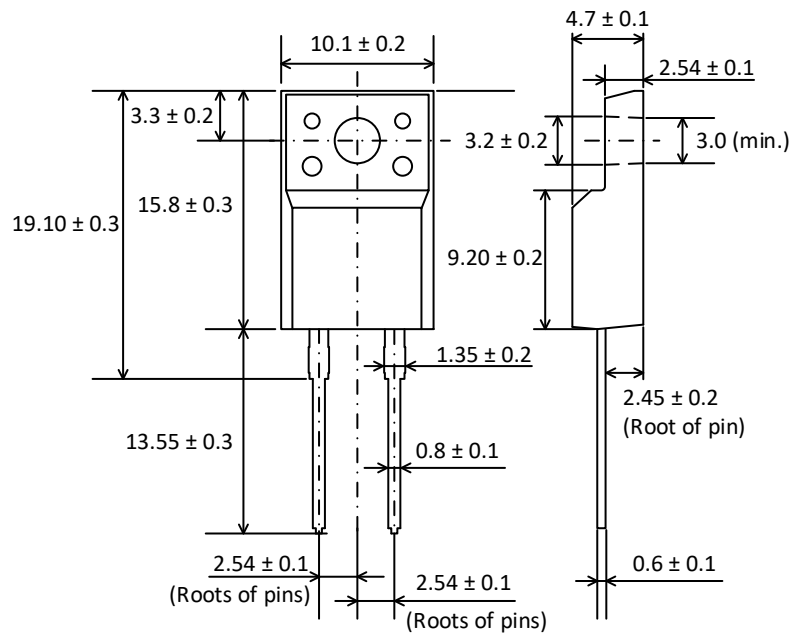


Figure 4. Typical Characteristics: V_R vs. I_R

FML-G12S

Physical Dimensions

• TO220F-2L



NOTES:

- Dimensions in millimeters
- All the dimensions exclude mold flashes.
- 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.

Marking Diagram

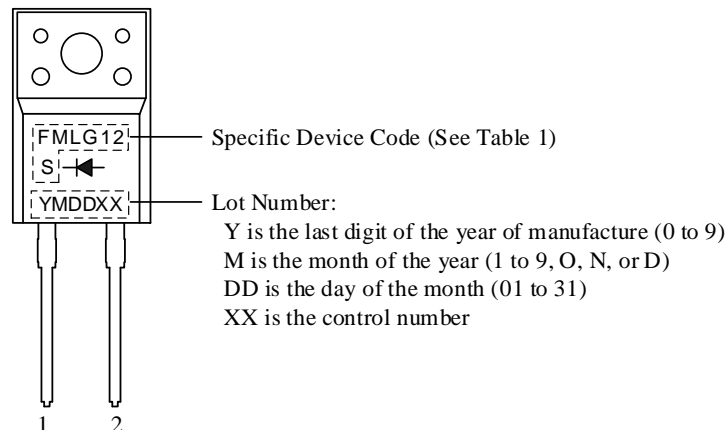


Table 1. Specific Device Code

Specific Device Code	Part Number
FMLG12S	FML-G12S

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