

**Features**

- High Surge Capability
- Types up to 600 V  $V_{RRM}$

DO-5 Package

**Note:**

1. Standard polarity: Stud is cathode.
2. Reverse polarity (R): Stud is anode.
3. Stud is base.


**Maximum ratings, at  $T_J = 25\text{ }^\circ\text{C}$ , unless otherwise specified ("R" devices have leads reversed)**

Parameter	Symbol	Conditions	FR30A(R)02	FR30B(R)02	FR30D(R)02	FR30G(R)02	FR30J(R)02	Unit
Repetitive peak reverse voltage	$V_{RRM}$		50	100	200	400	600	V
RMS reverse voltage	$V_{RRM}$		35	70	140	280	420	V
DC blocking voltage	$V_{DC}$		50	100	200	400	600	V
Continuous forward current	$I_F$	$T_C \leq 100\text{ }^\circ\text{C}$	30	30	30	30	30	A
Surge non-repetitive forward current, Half Sine Wave	$I_{FSM}$	$T_C = 25\text{ }^\circ\text{C}$ , $t_p = 8.3\text{ ms}$	300	300	300	300	300	A
Operating temperature	$T_J$		-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-40 to 150	-40 to 150	-40 to 150	-40 to 150	-40 to 150	$^\circ\text{C}$

**Electrical characteristics, at  $T_J = 25\text{ }^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Conditions	FR30A(R)02	FR30B(R)02	FR30D(R)02	FR30G(R)02	FR30J(R)02	Unit
Diode forward voltage	$V_F$	$I_F = 30\text{ A}$ , $T_J = 25\text{ }^\circ\text{C}$	1.4	1.4	1.4	1.4	1.4	V
Reverse current	$I_R$	$V_R = 50\text{ V}$ , $T_J = 25\text{ }^\circ\text{C}$	25	25	25	25	25	$\mu\text{A}$
		$V_R = 50\text{ V}$ , $T_J = 125\text{ }^\circ\text{C}$	10	10	10	10	10	mA
<b>Recovery Time</b>								
Maximum reverse recovery time	$T_{RR}$	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $t_{RR} = 0.25\text{ A}$	200	200	200	200	250	nS
<b>Thermal characteristics</b>								
Thermal resistance, junction - case	$R_{\theta JC}$		0.46	0.46	0.46	0.46	0.46	$^\circ\text{C/W}$



Figure 1-Typical Forward Characteristics

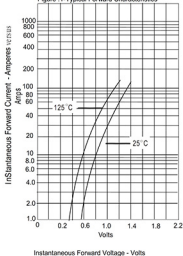
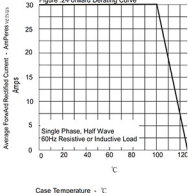


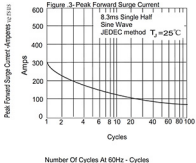
Figure 2-Forward Derating Curve



Case Temperature - °C

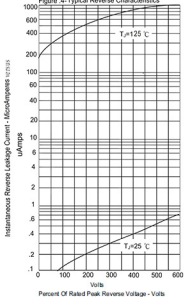
Instantaneous Forward Voltage - Volts

Figure 3-Peak Forward Surge Current



Number Of Cycles At 60Hz - Cycles

Figure 4-Typical Reverse Characteristics



Percent Of Rated Peak Reverse Voltage - Volts