

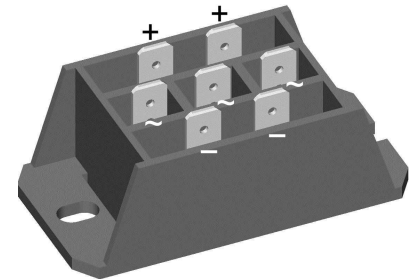
Standard Rectifier Module

3~ Rectifier	
$V_{RRM} =$	800 V
$I_{DAV} =$	60 A
$I_{FSM} =$	500 A

3~ Rectifier Bridge

Part number

VUO50-08NO3



 E72873



Features / Advantages:

- Package with DCB ceramic
- Improved temperature and power cycling
- Planar passivated chips
- Very low forward voltage drop
- Very low leakage current

Applications:

- Diode for main rectification
- For three phase bridge configurations
- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

Package: FO-F

- Isolation Voltage: 3600 V~
- Industry standard outline
- RoHS compliant
- 1/4" fast-on terminals
- Easy to mount with two screws
- Base plate: DCB ceramic
- Reduced weight
- Advanced power cycling

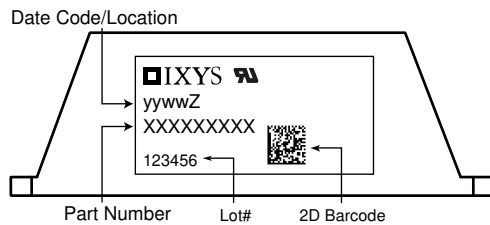
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Rectifier				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage					900	V
V_{RRM}	max. repetitive reverse blocking voltage					800	V
I_R	reverse current	$V_R = 800$ V	$T_{VJ} = 25^\circ\text{C}$			40	μA
		$V_R = 800$ V	$T_{VJ} = 150^\circ\text{C}$			1.5	mA
V_F	forward voltage drop	$I_F = 20$ A	$T_{VJ} = 25^\circ\text{C}$			1.07	V
		$I_F = 60$ A				1.32	V
		$I_F = 20$ A	$T_{VJ} = 125^\circ\text{C}$			0.98	V
		$I_F = 60$ A				1.30	V
I_{DAV}	bridge output current	$T_C = 110^\circ\text{C}$ rectangular	$T_{VJ} = 150^\circ\text{C}$ $d = \frac{1}{3}$			60	A
V_{FO}	threshold voltage	} for power loss calculation only				0.78	V
r_F	slope resistance					8.5	m Ω
R_{thJC}	thermal resistance junction to case					1.5	K/W
R_{thCH}	thermal resistance case to heatsink				0.4		K/W
P_{tot}	total power dissipation			$T_C = 25^\circ\text{C}$		80	W
I_{FSM}	max. forward surge current	$t = 10$ ms; (50 Hz), sine	$T_{VJ} = 45^\circ\text{C}$			500	A
		$t = 8,3$ ms; (60 Hz), sine	$V_R = 0$ V			540	A
		$t = 10$ ms; (50 Hz), sine	$T_{VJ} = 150^\circ\text{C}$			425	A
		$t = 8,3$ ms; (60 Hz), sine	$V_R = 0$ V			460	A
I^2t	value for fusing	$t = 10$ ms; (50 Hz), sine	$T_{VJ} = 45^\circ\text{C}$			1.25	kA ² s
		$t = 8,3$ ms; (60 Hz), sine	$V_R = 0$ V			1.22	kA ² s
		$t = 10$ ms; (50 Hz), sine	$T_{VJ} = 150^\circ\text{C}$			905	A ² s
		$t = 8,3$ ms; (60 Hz), sine	$V_R = 0$ V			880	A ² s
C_J	junction capacitance	$V_R = 400$ V; $f = 1$ MHz		$T_{VJ} = 25^\circ\text{C}$		25	pF



Package FO-F		Ratings				
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal			100	A
T_{VJ}	virtual junction temperature		-40		150	°C
T_{op}	operation temperature		-40		125	°C
T_{stg}	storage temperature		-40		125	°C
Weight				45		g
M_D	mounting torque		2		2.5	Nm
$d_{Spp/App}$	creepage distance on surface / striking distance through air	terminal to terminal	18.0	6.0		mm
$d_{Spb/Appb}$		terminal to backside	26.0	20.0		mm
V_{ISOL}	isolation voltage	t = 1 second 50/60 Hz, RMS; $I_{ISOL} \leq 1$ mA	3600			V
			3000			V



Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	VUO50-08NO3	VUO50-08NO3	Box	10	417238

Equivalent Circuits for Simulation

* on die level

$T_{VJ} = 150^{\circ}C$



Rectifier

$V_{0\ max}$	threshold voltage	0.78	V
$R_{0\ max}$	slope resistance *	7.3	mΩ



Outlines FO-F

