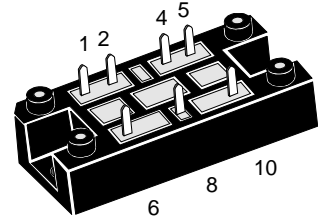
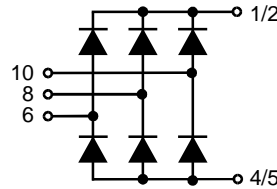


# Three Phase Rectifier Bridge

$V_{RRM} = 1200\text{ V}$   
 $I_{dAV} = 50\text{ A}$   
 $t_{rr} = 40\text{ ns}$

$V_{RSM}$ V	$V_{RRM}$ V	Type
1200	1200	VUE 50-12NO1



Symbol	Test Conditions	Maximum Ratings
$I_{dAV}$	$T_K = 85^\circ\text{C}$ , module	50 A
$I_{FSM}$	$T_{VJ} = 45^\circ\text{C}$ ; $V_R = 0$	t = 10 ms (50 Hz), sine: 200 A t = 8.3 ms (60 Hz), sine: 210 A
	$T_{VJ} = T_{VJM}$ ; $V_R = 0$	t = 10 ms (50 Hz), sine: 185 A t = 8.3 ms (60 Hz), sine: 195 A
$I^2t$	$T_{VJ} = 45^\circ\text{C}$ ; $V_R = 0$	t = 10 ms (50 Hz), sine: 200 A <sup>2</sup> s t = 8.3 ms (60 Hz), sine: 180 A <sup>2</sup> s
	$T_{VJ} = T_{VJM}$ ; $V_R = 0$	t = 10 ms (50 Hz), sine: 170 A <sup>2</sup> s t = 8.3 ms (60 Hz), sine: 160 A <sup>2</sup> s
$T_{VJ}$		-40...+150 °C
$T_{VJM}$		150 °C
$T_{stg}$		-40...+125 °C
$V_{ISOL}$	50/60 Hz, RMS	t = 1 min: 3000 V~ t = 1 s: 3600 V~
	$I_{ISOL} \leq 1\text{ mA}$	
$M_d$	Mounting torque	(M5) 2 - 2.5 Nm (10-32UNF) 18-22 lb.in.
Weight	typ.	35 g

### Features

- Package with DCB ceramic base plate
- Isolation voltage 3600 V~
- Planar passivated chips
- Leads suitable for PC board soldering
- Creeping and creepage-distance fulfils UL 508/CSA 22.2NO14 and VDE 0160 requirements
- Epoxy meet UL94V-O
- UL registered E72873

### Applications

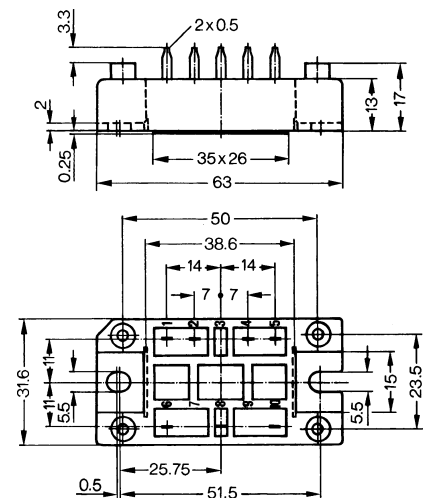
- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Output filter for PWM inverter

### Advantages

- Reduced EMI/RFI
- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling

Symbol	Test Conditions	Characteristic Values	
		typ.	max
$I_R$	$V_R = V_{RRM}$ ; $V_R = 0.8 V_{RRM}$	$T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$	0.75 mA 7 mA
$V_F$	$I_F = 30\text{ A}$ ;	$T_{VJ} = 25^\circ\text{C}$	2.55 V
$V_{T0}$	For power-loss calculations only		1.65 V
$r_T$			18.2 mΩ
$R_{thJS}$	per diode,	120° rect.	1.5 K/W
	per module,	120° rect.	0.25 K/W
$I_{RM}$	$I_F = 30\text{ A}$ , $-di_F/dt = 240\text{ A}/\mu\text{s}$ $V_R = 540\text{ V}$ , $L \leq 0.05\ \mu\text{H}$ , $T_{VJ} = 100^\circ\text{C}$		16 A 18 A
$t_{rr}$	$I_F = 1\text{ A}$ ; $-di/dt = 100\text{ A}/\mu\text{s}$ ; $V_R = 30\text{ V}$ , $T_{VJ} = 25^\circ\text{C}$		40 ns 60 ns
$d_s$	Creeping distance on surface		12.7 mm
$d_A$	Creepage distance in air		9.4 mm
$a$	Max. allowable acceleration		50 m/s <sup>2</sup>

### Dimensions in mm (1 mm = 0.0394")



Use output terminals in parallel connections

Data according to IEC 60747 and refer to a single diode unless otherwise stated. IXYS reserves the right to change limits, test conditions and dimensions.

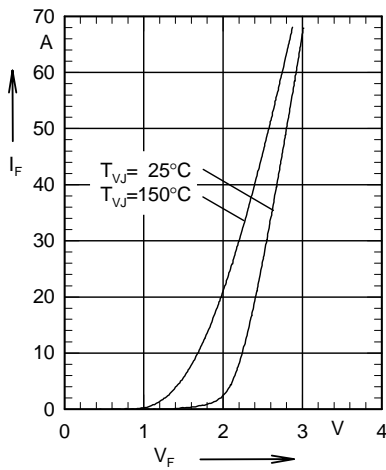


Fig. 1 Forward current versus voltage drop per diode.

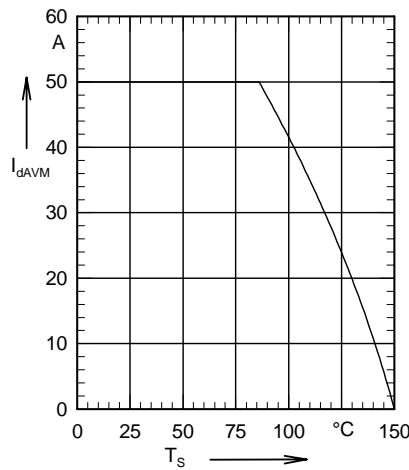


Fig. 2 Maximum forward current at heatsink temperature  $T_S$ .

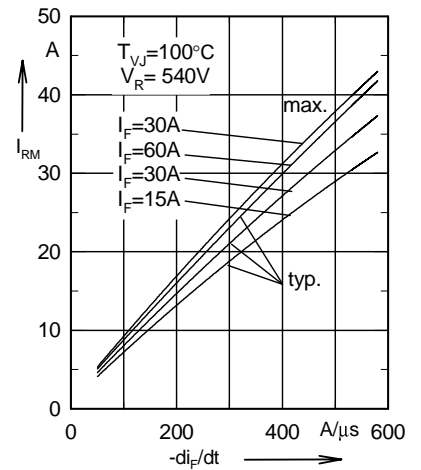


Fig. 3 Typical peak reverse current versus  $-di_F/dt$ .

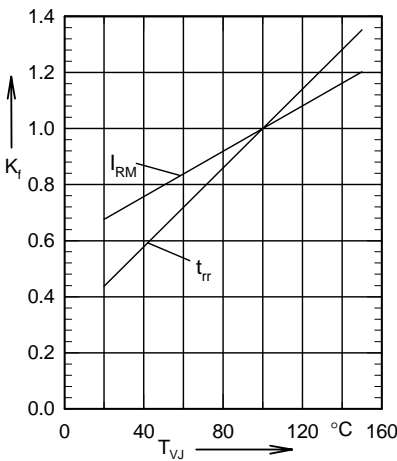


Fig. 4 Dynamic parameters versus junction temperature.

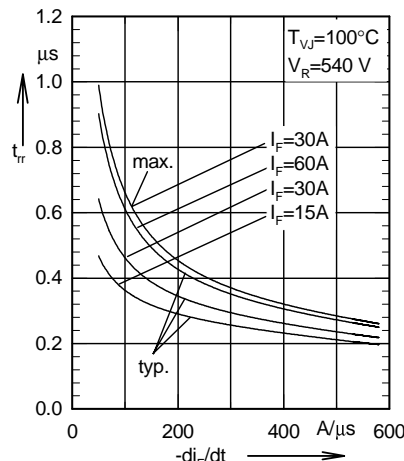


Fig. 5 Typical recovery time versus  $-di_F/dt$ .

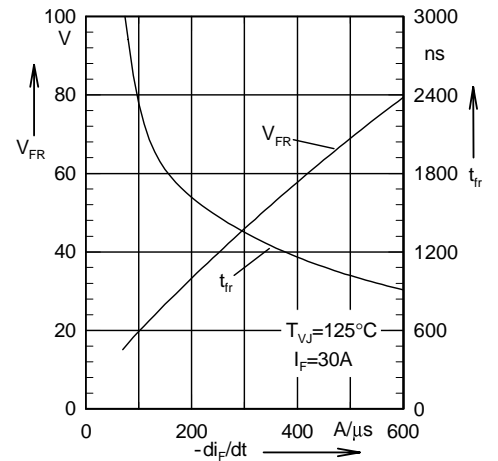


Fig. 6 Typical peak forward voltage and forward recovery time versus  $-di_F/dt$ .

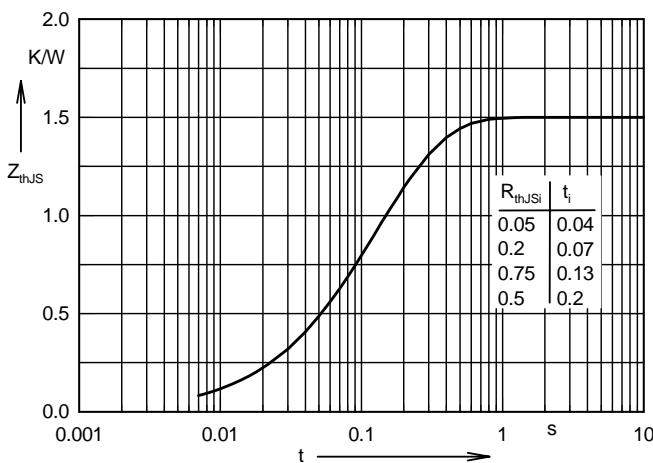


Fig. 7 Transient thermal impedance junction to heatsink

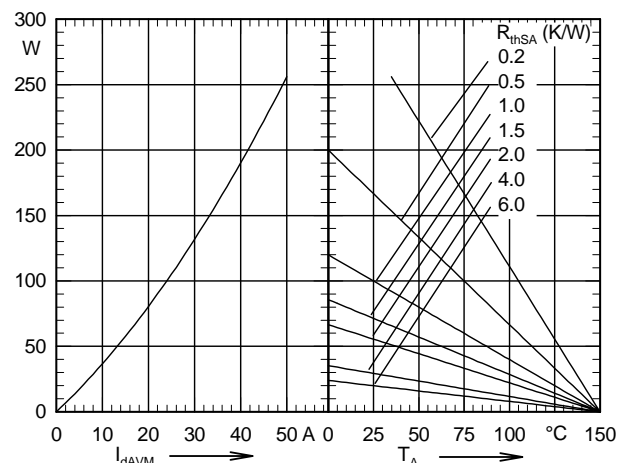


Fig. 8 Power dissipation versus direct output current and ambient temperature