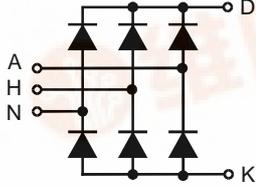


IXYS VUE 22-12NO7

ECO-PAC™ Three Phase Rectifier Bridge with Fast Recovery Epitaxial Diodes (FRED)

I_{dAV} = 24 A
 V_{RRM} = 1200 V
 t_{rr} = 40 ns

V_{RSM} V	V_{RRM} V	Typ
1200	1200	VUE 22-12NO7



Symbol	Conditions	Maximum Ratings	
I_{dAV} ① I_{dAVM}	$T_C = 85^\circ\text{C}$, module	24	A
		90	A
I_{FSM}	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$	$t = 10$ ms (50 Hz), sine	40 A
		$t = 8.3$ ms (60 Hz), sine	45 A
	$T_{VJ} = T_{VJM}$ $V_R = 0$	$t = 10$ ms (50 Hz), sine	35 A
		$t = 8.3$ ms (60 Hz), sine	40 A
I^2t	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$	$t = 10$ ms (50 Hz), sine	10 A ² s
		$t = 8.3$ ms (60 Hz), sine	10 A ² s
	$T_{VJ} = T_{VJM}$ $V_R = 0$	$t = 10$ ms (50 Hz), sine	5 A ² s
		$t = 8.3$ ms (60 Hz), sine	5 A ² s
T_{VJ}		-40...+150	°C
T_{VJM}		150	°C
T_{stg}		-40...+125	°C
V_{ISOL}	50/60 Hz, RMS $t = 1$ min $I_{ISOL} \leq 1$ mA $t = 1$ s	3000	V~
		3600	V~
M_d Weight	Mounting torque (M4) typ.	1.5-2/14-18	Nm/lb.in.
		19	g

Features

- Package with DCB ceramic base plate in low profile
- Isolation voltage 3000 V~
- Planar passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering

Applications

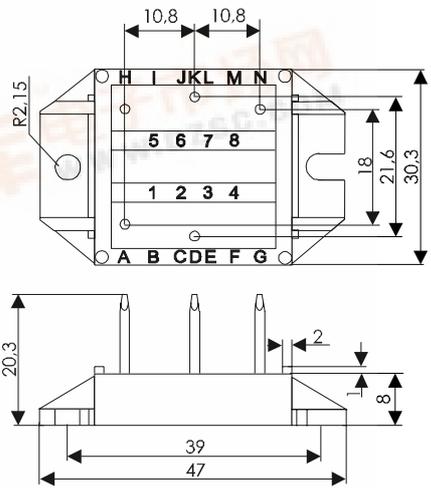
- Supplies for DC power equipment
- Input and output rectifiers for high frequency
- Battery DC power supplies
- Field supply for DC motors

Advantages

- Space and weight savings
- Improved temperature and power cycling capability
- Small and light weight
- Low noise switching

Symbol	Conditions	Characteristic Values	
		typ.	max.
I_R	$V_R = V_{RRM}$ $V_R = V_{RRM}$	$T_{VJ} = 25^\circ\text{C}$	0.06 mA
		$T_{VJ} = T_{VJM}$	0.25 mA
V_F	$I_F = 10$ A	$T_{VJ} = 25^\circ\text{C}$	2.92 V
V_{T0}	for power-loss calculations only		1.39 V
r_T			55 mΩ
R_{thJC}	per diode; DC current		2.5 K/W
R_{thCH}	per diode, DC current, typ.		0.3 K/W
I_{RM}	$I_F = 12$ A, $-di/dt = 100$ A/μs $V_R = 100$ V, $L = 0.05$ mH, $T_{VJ} = 100^\circ\text{C}$	4	8.5 A
t_{rr}	$I_F = 1$ A; $-di/dt = 50$ A/μs; $V_R = 30$ V, $T_{VJ} = 25^\circ\text{C}$	40	tbd ns
a	Max. allowable acceleration	50	m/s ²
d_s	creeping distance on surface	11.2	mm
d_A	creepage distance in air	9.7	mm

Dimensions in mm (1 mm = 0.0394")



Data according to IEC 60747 refer to a single diode unless otherwise stated
① for resistive load at bridge output.



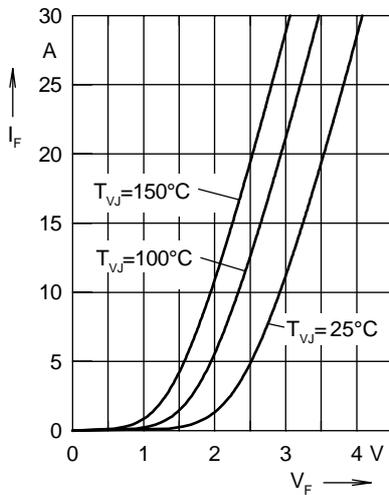


Fig. 1 Forward current I_F versus V_F

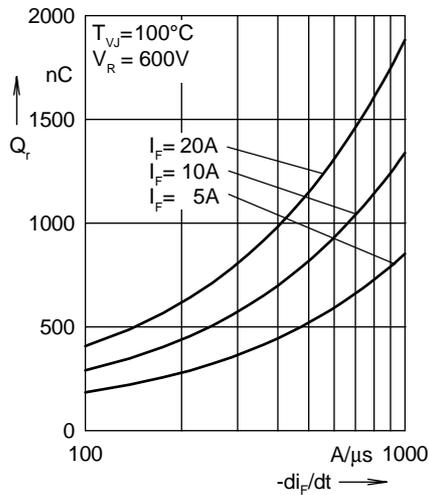


Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

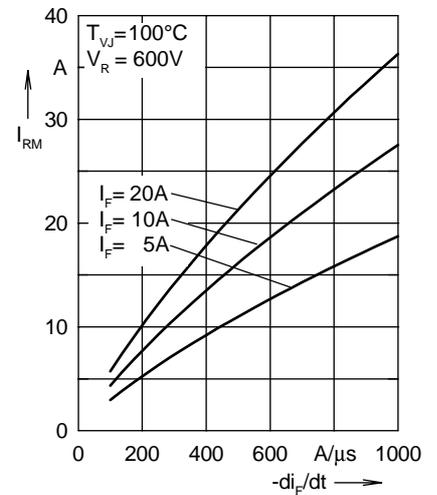


Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

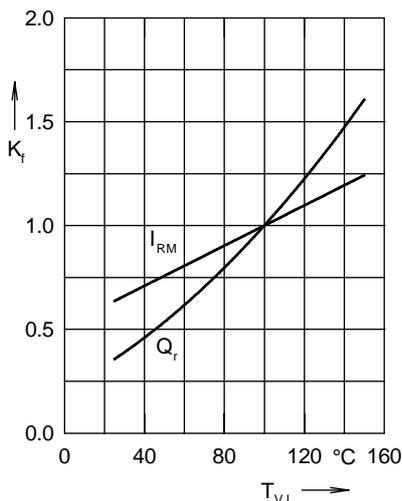


Fig. 4 Dynamic parameters Q_r , I_{RM} versus T_{VJ}

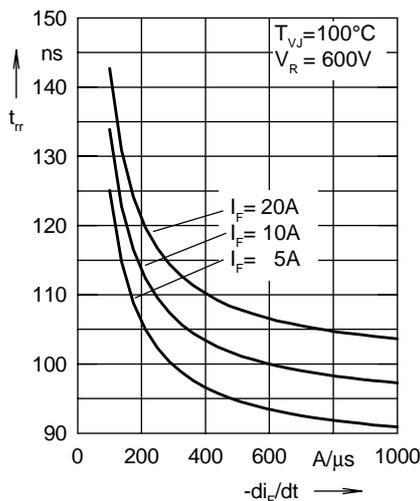


Fig. 5 Recovery time t_{rr} versus $-di_F/dt$

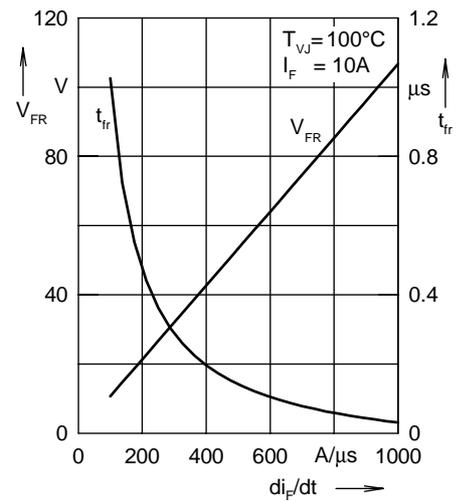


Fig. 6 Peak forward voltage V_{FR} and t_{fr} versus di_F/dt

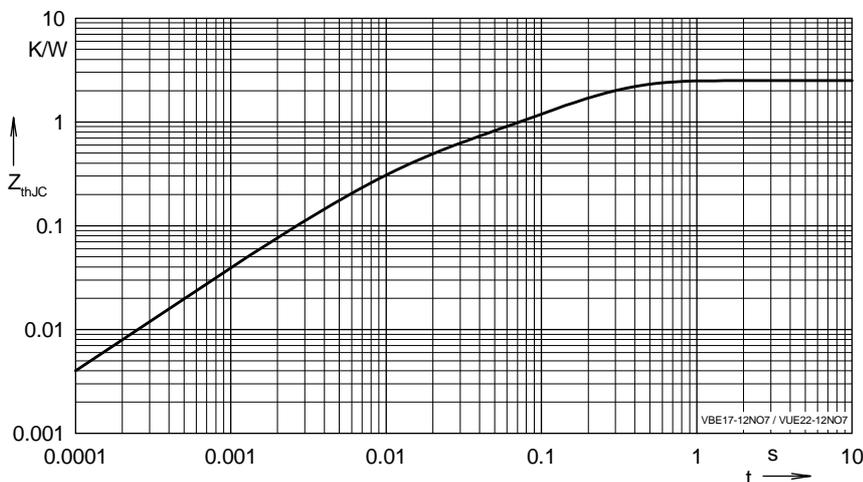


Fig. 7 Transient thermal resistance junction to case

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.8776	0.0052
2	0.3378	0.0003
3	0.0678	0.0004
4	1.2168	0.0092

NOTE: Fig. 2 to Fig. 6 shows typical values