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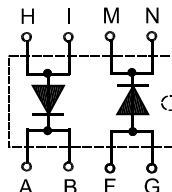
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# DSEI 2x30-06P

## Fast Recovery Epitaxial Diode (FRED)

**$I_{FAVM} = 2x30\text{ A}$**   
 **$V_{RRM} = 600\text{ V}$**   
 **$t_{rr} = 35\text{ ns}$**

$V_{RSM}$ V	$V_{RRM}$ V	Type
600	600	DSEI 2x 30-06P



Symbol	Conditions	Maximum Ratings (per diode)		Features
$I_{FRMS}$	$T_{VJ} = T_{VJM}$	70	A	<ul style="list-style-type: none"> <li>• 2 independent FRED in 1 package</li> <li>• Isolation voltage 3000 V~</li> <li>• Planar passivated chips</li> <li>• Leads suitable for PC board soldering</li> <li>• Very short recovery time</li> <li>• Soft recovery behaviour</li> </ul>
$I_{FAVM}$ ①	$T_C = 85^\circ\text{C}$ ; rectangular; $d = 0.5$	30	A	
$I_{FRM}$	$t_p < 10\ \mu\text{s}$ ; rep. rating; pulse width limited by $T_{VJM}$	375	A	
$I_{FSM}$	$T_{VJ} = 45^\circ\text{C}$ ; $t = 10\text{ ms}$ (50 Hz), sine	300	A	
$T_{VJ}$		-40...+150	$^\circ\text{C}$	<h3>Applications</h3> <ul style="list-style-type: none"> <li>• Antiparallel diode for high frequency switching devices</li> <li>• Anti saturation diode</li> <li>• Snubber diode</li> <li>• Free wheeling diode in converters and motor control circuits</li> <li>• Rectifiers in switch mode power supplies (SMPS)</li> <li>• Inductive heating and melting</li> <li>• Uninterruptible power supplies (UPS)</li> <li>• Ultrasonic cleaners and welders</li> </ul>
$T_{VJM}$		150	$^\circ\text{C}$	
$T_{stg}$		-40...+150	$^\circ\text{C}$	
$P_{tot}$	$T_C = 25^\circ\text{C}$	100	W	
$V_{ISOL}$	50/60 Hz, RMS	$t = 1\text{ min}$	2500	V~
	$I_{ISOL} \leq 1\text{ mA}$	$t = 1\text{ s}$	3000	V~
$M_d$	Mounting torque (M4)	1.5 - 2.0	Nm	
		14 - 18	lb.in.	
<b>Weight</b>		18	g	

Symbol	Conditions	Characteristic Values (per diode)	
		typ.	max.
$I_R$	$T_{VJ} = 25^\circ\text{C}$ $V_R = V_{RRM}$		100 $\mu\text{A}$
	$T_{VJ} = 25^\circ\text{C}$ $V_R = 0.8 \cdot V_{RRM}$		50 $\mu\text{A}$
	$T_{VJ} = 125^\circ\text{C}$ $V_R = 0.8 \cdot V_{RRM}$		7 mA
$V_F$	$I_F = 30\text{ A}$ ; $T_{VJ} = 150^\circ\text{C}$		1.4 V
	$T_{VJ} = 25^\circ\text{C}$		1.6 V
$V_{T0}$	For power-loss calculations only		1.01 V
$r_T$	$T_{VJ} = T_{VJM}$		7.1 m $\Omega$
$R_{thJC}$			1.25 K/W
$R_{thCK}$		0.05	K/W
$t_{rr}$	$I_F = 1\text{ A}$ ; $-di/dt = 100\text{ A}/\mu\text{s}$	35	50 ns
	$V_R = 30\text{ V}$ ; $T_{VJ} = 25^\circ\text{C}$		
$I_{RM}$	$V_R = 350\text{ V}$ ; $I_F = 30\text{ A}$ ; $-di_F/dt = 240\text{ A}/\mu\text{s}$	10	11 A
	$L \leq 0.05\ \mu\text{H}$ ; $T_{VJ} = 100^\circ\text{C}$		
$d_s$	Creeping distance on surface	min. 11.2	mm
$d_A$	Creeping distance in air	min. 11.2	mm
$a$	Allowable acceleration	max. 50	m/s <sup>2</sup>

### Advantages

- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling capability
- Low noise switching
- Small and light weight

Recommended replacement:  
DSEI 2x31-06P, DSEI 2x31-06C

①  $I_{FAVM}$  rating includes reverse blocking losses at  $T_{VJM}$ ,  $V_R = 0.8 V_{RRM}$ , duty cycle  $d = 0.5$   
 Data according to IEC 60747

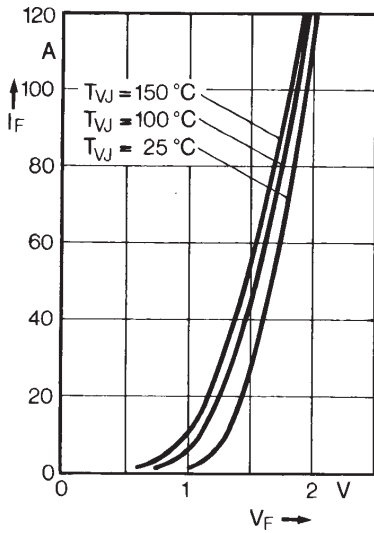


Fig. 1 Forward current versus voltage drop.

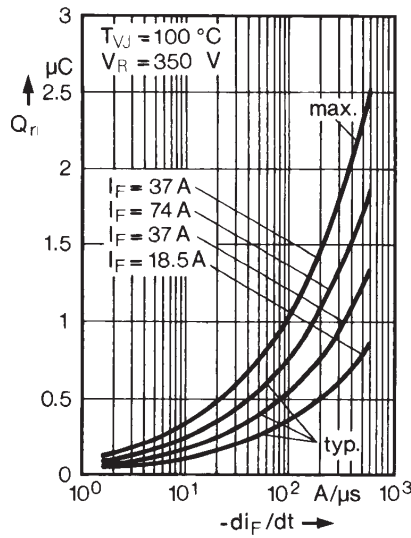


Fig. 2 Recovery charge versus  $-di_F/dt$ .

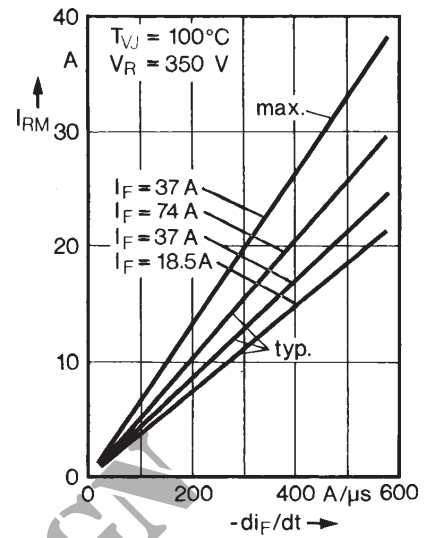


Fig. 3 Peak reverse current versus  $-di_F/dt$ .

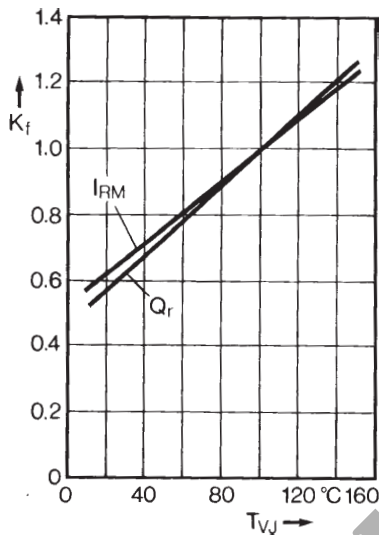


Fig. 4 Dynamic parameters versus junction temperature.

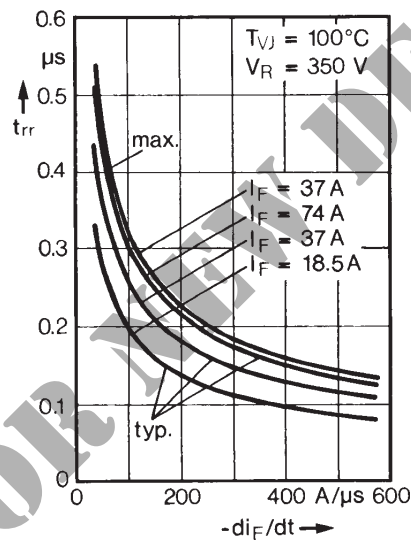


Fig. 5 Recovery time versus  $-di_F/dt$ .

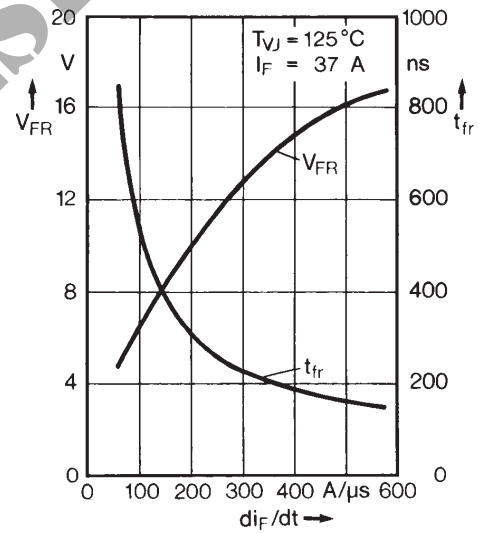


Fig. 6 Peak forward voltage versus  $di_F/dt$ .

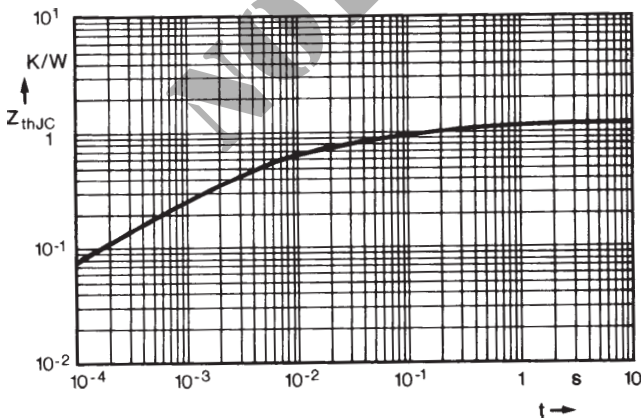


Fig. 7 Transient thermal impedance junction to case.

Dimensions in mm (1mm = 0.0394")

