

# FRD05610012E

## FAST RECOVERY EPITAXIAL DIODE CHIP

### APPLICATIONS

- Switch Mode Power Supplies.
- Motor Control.
- Free Wheel/Antiparallel Diode For Use With IGBT And Other Power Switches In Inverters And Welding Applications.

### TYPICAL KEY PARAMETERS

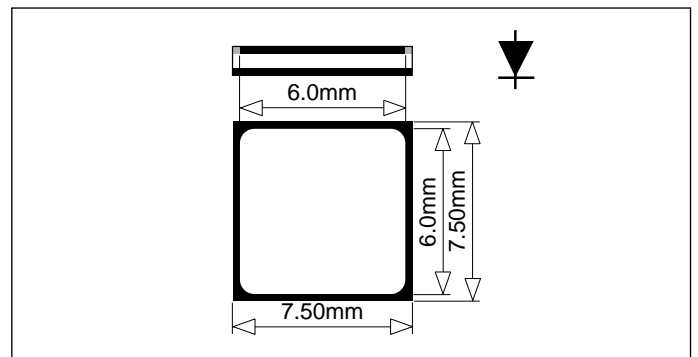
$V_{RRM}$	1200V
$I_F$	100A
$t_{rr}$	112ns

### FEATURES

- Planar Structure With "HIVOX" Semi-Insulating Polysilicon Junction Passivation And Soft Recovery Characteristics.

### VOLTAGE RATINGS

Type Number	Repetitive Peak Reverse Voltage $V_{RRM}$ V	Conditions
FRD05610012E	1200	$T_j = 150^\circ\text{C}$



Typical chip thickness: 465µm.

Wire sizes: 8 ≥ bondwires 300µm Ø.

Composition of wire: 99.999% Aluminium.

Back metal: Aluminium, Titanium, Nickel, Silver.

$T_{max}$  for chip **NOT** to exceed 275°C for more than 15 minutes during soldering, using 96S solder.

Packing for shipment is either membrane or waffle tray.

Static sensitive device - observe static handling precautions.

### CURRENT RATING

Symbol	Parameter	Conditions	Max.	Units
$I_F$	Forward current	-	100	A

All ratings given assuming suitable mountdown of chip.

## THERMAL RATING

Symbol	Parameter	Conditions	Max.	Units
$T_j$	Junction temperature	-	150	°C
$T_{stg}$	Storage temperature range	-	-55 to +150	°C

## CHARACTERISTICS

Symbol	Parameter	Conditions	Typ.	Max.	Units
$V_{FM}$	Forward voltage	At $I_F = 100A$ peak, $T_j = 25^\circ C$	2.25	2.7	V
		At $I_F = 100A$ peak, $T_j = 125^\circ C$	1.9	2.3	V
$I_{RM}$	Peak reverse current	At $V_{RRM}$ , $T_j = 125^\circ C$	-	1	mA
$t_{rr}$	Reverse recovery time	$I_F = 100A$ , $di_{RR}/dt = 300A/\mu s$ $T_j = 25^\circ C$ , $V_R = 50\%V_{RRM}$	110	-	ns
$Q_{RR}$	Recovered charge		4	-	$\mu C$
$t_{rr}$	Reverse recovery time	$I_F = 100A$ , $di_{RR}/dt = 300A/\mu s$ $T_j = 125^\circ C$ , $V_R = 50\%V_{RRM}$	240	-	ns
$Q_{RR}$	Recovered charge		12	-	$\mu C$



#### HEADQUARTERS OPERATIONS GEC PLESSEY SEMICONDUCTORS

Cheney Manor, Swindon,  
Wiltshire, SN2 2QW, United Kingdom.  
Tel: + 44 (0)1793 518000  
Fax: + 44 (0)1793 518411

#### GEC PLESSEY SEMICONDUCTORS P.O. Box 660017

1500 Green Hills Road,  
Scotts Valley, California 95067-0017,  
United States of America.  
Tel: + 1 (408) 438 2900  
Fax: + 1 (408) 438 5576

## POWER PRODUCT CUSTOMER SERVICE CENTRES

- **FRANCE.** 2 rue Henri-Bergson, 92665 Asnieres Cedex.  
Tel: + 33 1 40 80 54 00. Fax: + 33 1 40 80 55 87.
- **GERMANY.** Ungererstrasse 129, 80505 München.  
Tel: + 49 (0)89 36 09 060. Fax: + 49 (0)89 36 09 06 55.
- **NORTH AMERICA.** At Dedham Place, Suite 125, 3 Allied Drive, Dedham. MA 02026.  
Tel: + 1 617 251 0126. Fax: + 1 617 251 0106.
- **UNITED KINGDOM.** Doddington Road, Lincoln. LN6 3LF.  
Tel: + 44 (0)1522 500500. Fax: + 44 (0)1522 500550.

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