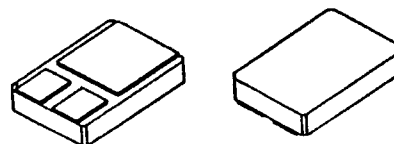




PRELIMINARY

SOLID STATE DEVICES, INC14849 Firestone Boulevard · La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424**Designer's Data Sheet****FEATURES:**

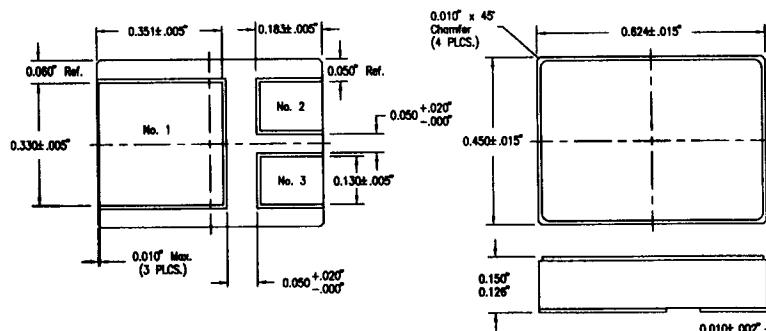
- Hermetically Sealed, Surface Mount Package
 - TX, TXV and S Level
 - Replaces: IRFM7250/8450, FRF250 R/H
 - Also available in TO-254Z, TO-258, TO-259, TO-61
-
- Second Generation Radiation Hardened Mosfet results from new design concepts.
 - Gamma: A) Meets pre-rad specifications to 100 KRad(Si)
B) Defined end-point specs at 300 and 1000 KRad(Si)
C) Performance permits limited use to 3000 KRad(Si)
 - Gamma Dot survives 3E9 Rad(Si)/sec at 500 BVDSS typically and survives 2E12 typically if current limited to IDM.
 - Photo Current is typically 30nA per Rad(Si)/sec.
 - Neutron: A) Pre-rad specifications for 3E12 neutrons/cm²
B) Usable to 3E13 neutrons
 - Single Event: typically survives 1E3 ions/cm² having an LET < 35 MeV/mg/cm² and a range ≥ 30μm at 200 BVDSS

**SFFR250
SFFD250****27 AMP
200 VOLTS
0.100 Ω****RADIATION HARDENED
N-CHANNEL MOSFET****MILPACK****MAXIMUM RATINGS**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	200	Volts
Gate to Source Voltage	V _{GS}	± 20	Volts
Continuous Drain Current	I _D	27	Amps
Operating and Storage Temperature	Top & Tstg	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	1.0	°C/W
Total Device Dissipation @ TA=25°C Derate above 25°C @ 1 W/°C	P _D	125	Watts

PACKAGE OUTLINE: MILPACK**PIN OUT:**

PIN 1: DRAIN
PIN 2: SOURCE
PIN 3: GATE



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: FR0003 A**MED**

SFFR250 SFFD250

PRELIMINARY



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ELECTRICAL CHARACTERISTICS @ T_J=25 °C (Unless Otherwise Specified)

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (V _{GS} =0 V, I _D =1mA)		BV _{DSS}	200		---	V
Drain to Source on State Resistance (V _{GS} =10 V, I _D =17A)		R _{DS(on)}	---		0.100	Ω
On State Drain Current (V _D >I _{D(on)} X R _{DS(on)} Max., V _{GS} =10V)		I _{D(on)}	27		---	A
Gate Threshold Voltage (V _D =V _{GS} , I _D =1mA)		V _{GS(th)}	2.0		4.0	V
Forward Transconductance (V _D >I _{D(on)} X R _{DS(on)} Max, I _{DS} =60% rated I _D)		g _{fs}	13		---	S(Ω)
Zero Gate Voltage Drain Current (V _D =max rated voltage, V _{GS} =0 V) (V _D =80% rated V _D , V _{GS} =0 V, T _A =125°C)		I _{DSS}	---		500 250	μA
Gate to Source Leakage Forward	At rated V _{GS}	I _{GSS}	---		100	nA
Gate to Source Leakage Reverse			---		-100	
Total Gate Charge	V _{GS} =10 Volts	Q _g	60		250	nC
Gate to Source Charge	50% rated V _D	Q _{gs}	10		50	
Gate to Drain Charge	Rated I _D	Q _{gd}	30		100	
Turn on Delay Time	V _D =50% rated V _D	t _{d(on)}	---		170	nsec
Rise Time	rated I _D	t _r	---		600	
Turn Off Delay Time	R _G =25Ω	t _{d(off)}	---		580	
Fall Time	0 ≤ V _{GS} ≤ 10	t _f	---		500	
Diode Forward Voltage (I _S =rated I _D , V _{GS} =0 V, T _J =25°C)		V _{SD}	---		2.0	V
Diode Reverse Recovery Time	T _J =25°C	t _{rr}	---		1700	nsec
Reverse Recovery Charge	I _F =rated I _D di/dt=100 A/μsec	Q _{RR}	---		---	μC

For thermal derating curves and other characteristic curves please contact SSDI Marketing Department.