



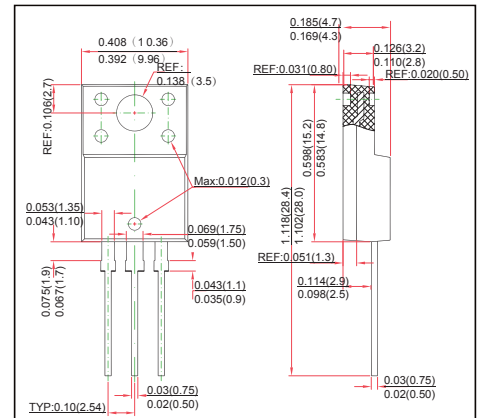
TO-220F Plastic-Encapsulate MOSFETS

**FEATURE**

- Low Crss
- Fast switching
- Improved dv/dt capability
- 600V N-Channel Power MOSFET

**MECHANICAL DATA**

- Case style:TO-220F molded plastic
- Mounting position:any



**MAXIMUM RATINGS AND CHARACTERISTICS**

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	600	V
Gate-Source Voltage	$V_{GS}$	$\pm 30$	
Continuous Drain Current	$I_D$	12	A
Single Pulsed Avalanche Energy (note1)	$E_{AS}$	790	mJ
Power Dissipation	$P_D$	2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	$^{\circ}C/W$
Operating Temperature	$T_J$	150	$^{\circ}C$
Storage Temperature	$T_{STG}$	-55~+150	

**MOSFET ELECTRICAL CHARACTERISTICS**  $T_A=25^{\circ}C$  unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Units	
<b>Off characteristics</b>							
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	600			V	
Drain-source diode forward voltage(note2)	$V_{SD}$	$V_{GS} = 0V, I_S = 12A$			1.4		
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 600V, V_{GS} = 0V$			10	$\mu A$	
Gate-body leakage current, forward(note2)	$I_{GSSF}$	$V_{DS} = 0V, V_{GS} = 30V$			100	nA	
Gate-body leakage current, reverse(note2)	$I_{GSSR}$	$V_{DS} = 0V, V_{GS} = -30V$			-100		
<b>On characteristics (note2)</b>							
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.0		4.0	V	
Static drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 6.0A$			0.8	$\Omega$	
<b>Dynamic characteristics (note 3)</b>							
Input capacitance	$C_{iss}$	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$		1800		pF	
Output capacitance	$C_{oss}$				200		
Reverse transfer capacitance	$C_{rfs}$				25		
<b>Switching characteristics(note3)</b>							
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 325V, R_G = 4.7\Omega, I_D = 12A$		30		ns	
Turn-on rise time	$t_r$				90		
Turn-off delay time	$t_{d(off)}$				160		
Turn-off fall time	$t_f$				90		

**Notes :**

1.  $L = 10mH, I_{AS} = 12A, V_{DD} = 50V, R_G = 25\Omega, Starting T_J = 25^{\circ}C.$
2. Pulse Test : Pulse width  $\leq 300\mu s,$  duty cycle  $\leq 2\%.$
3. These parameters have no way to verify.