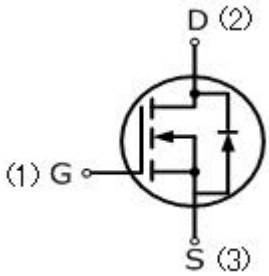
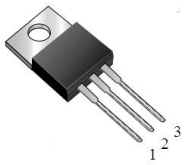
2N60(F,B,H,G,D)

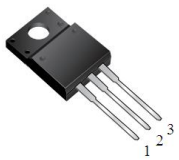
2A mps,600 Volts N-CHANNEL MOSFET

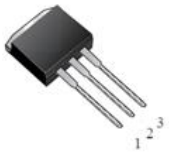
FEATURE

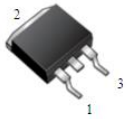
- 2A,600V,$R_{DS(ON)}$=4Ω@V_{GS}=10V/1A
- Low gate charge
- Low C_{iss}
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability




TO-220AB
2N60


ITO-220AB
2N60F


TO-262
2N60H


TO-263
2N60B


TO-252
2N60G


TO-251
2N60D

Absolute Maximum Ratings(T_C=25℃,unless otherwise noted)

Parameter		Symbol	2N60	UNIT
Drain-Source Voltage		V_{DSS}	600	V
Gate-Source Voltage		V_{GSS}	±30	
Continuous Drain Current		I_D	2	A
Pulsed Drain Current(Note1)		I_{DM}	8	
Single Pulse Avalanche Energy (Note 2)		E_{AS}	120	mJ
Avalanche Current(Note1)		I_{AR}	2.0	A
Repetitive Avalanche Energy (Note1)		E_{AR}	5.4	mJ
Reverse Diode dV/dt (Note 3)		dv/dt	4.5	V/ns
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55 to +150	℃
Maximum lead temperature for soldering purposes, 1/8″from case for 5 seconds		T_L	260	℃
Mounting Torque	6-32 or M3 screw		10	lbf • in
			1.1	N • m

Thermal Characteristics

Parameter		Symbol	ITO-220	TO-220	TO-262 TO-263	TO-251 TO-252	Units
Maximum Junction-to-Case		R_{thJC}	4	2	2	6	℃/W
Maximum Power Dissipation	T_C=25℃	P_D	32	62	62	21	W

Electrical Characteristics (T_C=25℃,unless otherwise noted)						
Parameter	**Symbol**	**Test Conditions**	**Min**	**Typ**	**Max**	**Units**
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=250uA	600	—	—	V
Breakdown Temperature Coefficient	ΔBV_{DSS} /ΔT_J	Reference to 25℃, I_D=250μA	—	0.5	—	V/℃
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=600V, V_{GS}=0V	—	—	1	μA
Gate-Body Leakage Current, Forward	I_{GSSF}	V_{GS}=30V, V_{DS}=0V	—	—	100	nA
Gate-Body Leakage Current, Reverse	I_{GSSR}	V_{GS}=-30V, V_{DS}=0V	—	—	-100	nA
On Characteristics						
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250uA	2	—	4	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=1A	—	—	4	Ω
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=25V, V_{GS}=0V, f=1.0MHZ	—	180	235	pF
Output Capacitance	C_{oss}		—	20	25	pF
Reverse Transfer Capacitance	C_{rss}		—	4.3	5.6	pF
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=300V, I_D=2A, R_G=25Ω (Note4,5)	—	9	28	ns
Turn-On Rise Time	t_r		—	25	60	ns
Turn-Off Delay Time	$t_{d(off)}$		—	24	58	ns
Turn-Off Fall Time	t_f		—	28	66	ns
Total Gate Charge	Q_g	V_{DS}=480V, I_D=2A, V_{GS}=10V, (Note4,5)	—	8.5	12	nC
Gate-Source Charge	Q_{gs}		—	1.3	—	nC
Gate-Drain Charge	Q_{gd}		—	4.1	—	nC
Drain-Source Body Diode Charcteristics and Maximum Ratings						
Continuous Diode Forward Current	I_S		—	—	2	A
Pulsed Diode Forward Current	I_{SM}		—	—	8	A
Diode Forward Voltage	V_{SD}	I_S=2A, V_{GS}=0V	—	—	1.4	V
Reverse Recovery Time	t_{rr}	V_{GS}=0V, I_S=2A, dI_F/dt=100A/μs, (Note4)	—	230	—	ns
Reverse Recovery Charge	Q_{rr}		—	1	—	μC

Notes

1. Repetitive Rating: pulse width limited by maximum junction temperature
2. V_{DD}=50V, starling, L=58mH, R_G=25Ω, I_{AS}=2A , T_J=25℃
3. I_{SD}≤I_D, dI/dt=200A/μs, V_{DD}≤BV_{DSS}, starting T_J=25℃.
4. Pulse width≤300μs; duty cycle≤2%.
5. Repetitive rating; pulse width limited by maximum junction temperature.