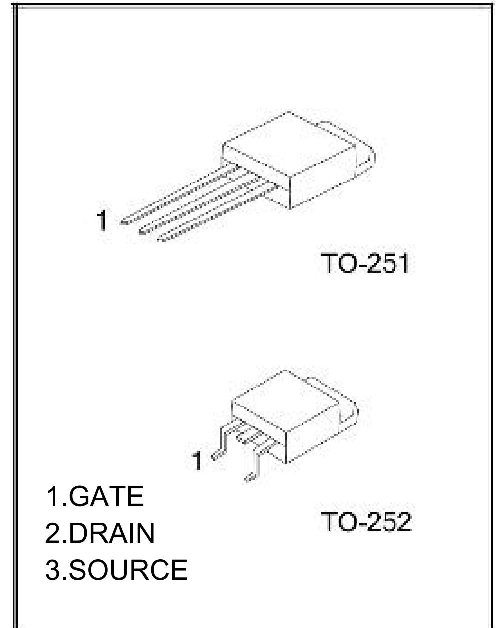
SHENZHEN MENGKE ELECTRONICS TECHNOLOGY CO.,LTD

TO-252/TO-251Plastic-Encapsulate MOSFETS

MK1N60 N-Channel 600-V(D-S) Power MOSFET

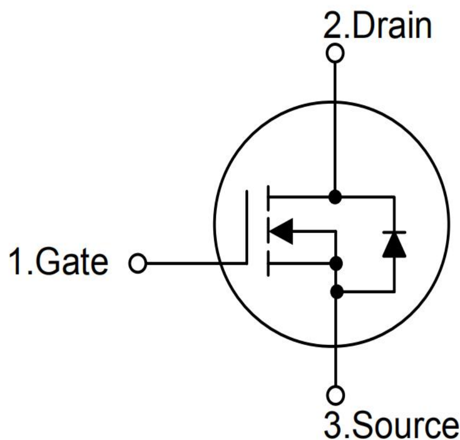
V(BR)DSS	RDS(on)MAX	ID
600V	12Ω@ 10V	1A



General Description:

The MK 1N60 is a high voltage MOSFET and is designed to have better characteristics, such as fast switching time, low gate charge, low on-state resistance and have a high rugged avalanche characteristics. This power MOSFET is usually used at high speed switching applications in power supplies, PWM motor controls, high efficient DC to DC converters and bridge circuits.

Equivalent Circuit :



MARKING:

MK 1N60 MKD/U ****
MK--logo D--252 U--251 **--Date

FEATURE:

- Fast switching capability
- Avalanche energy specified
- Improved dv/dt capability, high ruggedness
- Low reverse transfer capacitance

Maximum ratings (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	600	V
Gate-Source Voltage	VGS	±30	
Continuous Drain Current	ID	1	A
Pulsed Diode Curren	IDM	4.8	
Power Dissipation	PD	28	W
Thermal Resistance from Junction to Ambient (t≤10s)	RθJA	110	℃/W
Operating Junction	TJ	150	℃
Storage Temperature	TSTG	-55~+150	

MOSFET ELECTRICAL CHARACTERISTICS

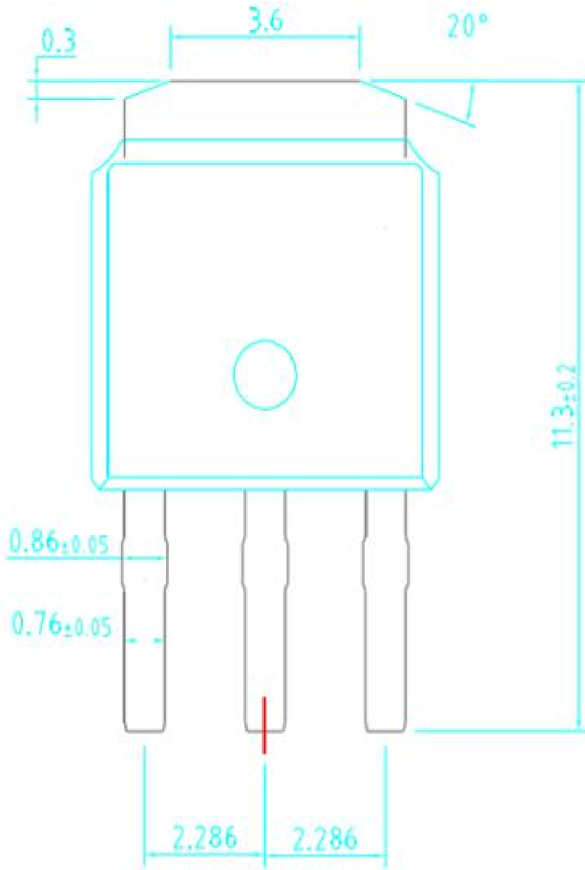
Static Electrical Characteristics (Ta = 25 ℃ Unless Otherwise Noted)

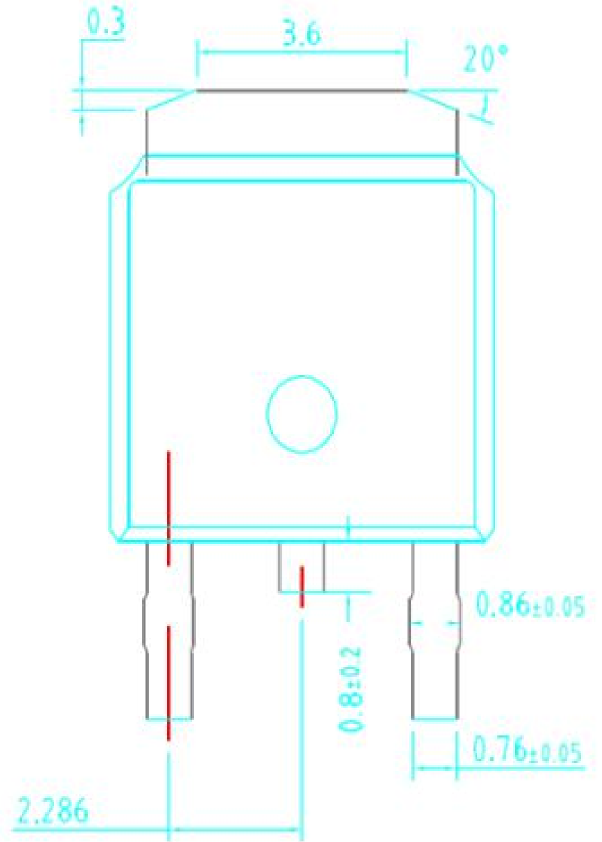
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	V(BR)DSS	VGS = 0V, ID = 250μA	600			V
Gate-source threshold voltage	VGS(th)	VDS =VGS, ID = 250μA	2		4	V
Gate-source leakage	IGSS	VDS =0V, VGS = ±30V			±100	nA
Zero gate voltage drain current	IDSS	VDS = 600V, VGS =0V			10	μA
Drain-source on-state resistancea	RDS(on)	VGS = 10V, ID = 1A		9.5	12	Ω
Forward transconductancea	gfs	VDS = 300V, ID = 1A		25		S
Diode forward voltage	VSD	IS=1A, VGS=0V		0.8	1.5	V
Dynamic						
Input capacitance	Ciss	VDS = 25V, VGS =0V, f=1MHz		120	150	pF
Output capacitance	Coss			20	25	pF
Reverse transfer capacitanceb	Crss			3.0	4.0	pF
Total gate charge	Qg	VDS = 300V, VGS = 10V, ID = 1.2A		5.0	6.0	nC
Gate-source charge	Qgs			1.0		nC
Gate-drain charge	Qgd			2.6		nC
Gate resistance	Rg	f=1MHz		10		Ω
Switchingb						
Turn-on delay time	td(on)	VDD= 300V RL= 50Ω, ID ≈ 1.2A, VGEN= 10V,Rg= 50Ω		5	20	ns
Rise time	tr			25	60	ns
Turn-off delay time	td(off)			7	25	ns
Fall time	tf			25	60	ns
Drain-Source Diode Characteristics						
Body Diode Reverse Recovery Time	trr	If=1.2A, dl/dt=100A/us		160		ns
Body Diode Reverse Recovery Charge	grr	If=1.2A, dl/dt=100A/us		0.3		UC
Continuous Source-Drain Diode Current	IS				1.2	A
Pulsed Diode forward Curren	ISM				4.8	A

Note :

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 10 sec.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.

PACKAGE OUTLINE DIMENSIONS :





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