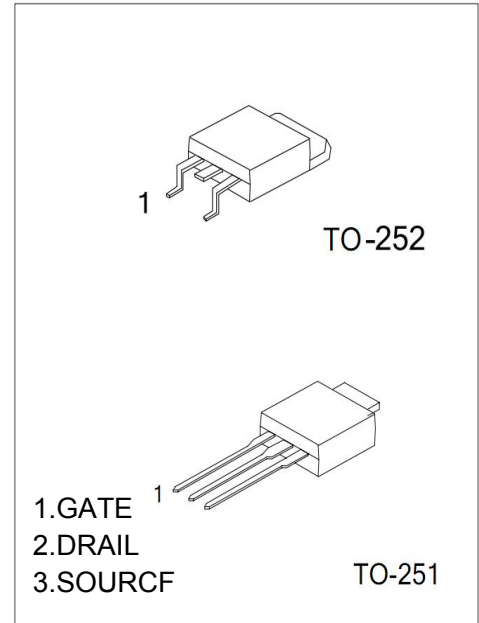




**MK5N60 N-Channel 650-V(D-S) Power MOSFET**

<b>V(BR)DSS</b>	<b>RDS(on)MAX</b>	<b>ID</b>
600 V	2.2Ω@ 10 V	5A

**Equivalent Circuit:**



**General Description:**

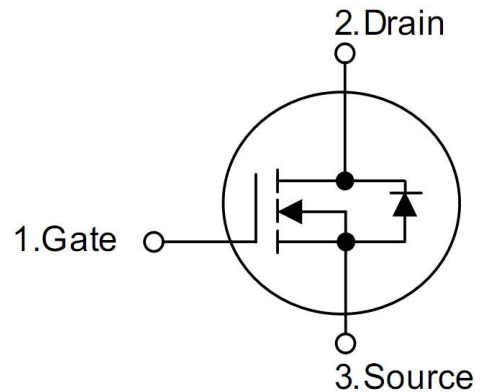
The MK 5N60 is a high voltage power MOSFET and is designed to have better characteristics, such as fast switching time, low gate charge, low on-state resistance and have a high rugged avalanche characteristics. This power MOSFET is usually used at high speed switching applications in power supplies, PWM motor controls, high efficient DC to DC converters and bridge circuits.

**MARKING:** MK 5N60 MKD / U \*\*\*\*  
(D-252) / (U-251)

**FEATURE:**

- ※ High Current Rating
- ※ Lower Rds(on)
- ※ Lower Capacitance
- ※ Improved dv/dt capability
- ※ Fast switching
- ※ Lower total gate charge ( typical 5.0 nC)
- ※ TrenchFET Power MOSFET

**SYMBOL:**



**Maximum ratings ( Ta=25°C unless otherwise noted)**

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	600	V
Gate-Source Voltage	VGS	±30	
Continuous Drain Current	ID	5	A
Pulsed Diode Curren	IDM	20	
Power Dissipation	PD	54	W
Thermal Resistance from Junction to Ambient (t≤10s)	RθJA	110	°C/W
Operating Junction	TJ	150	°C
Storage Temperature	TSTG	-55~+150	



**MOSFET ELECTRICAL CHARACTERISTICS**

**Static Electrical Characteristics (Ta = 25 °C Unless Otherwise Noted)**

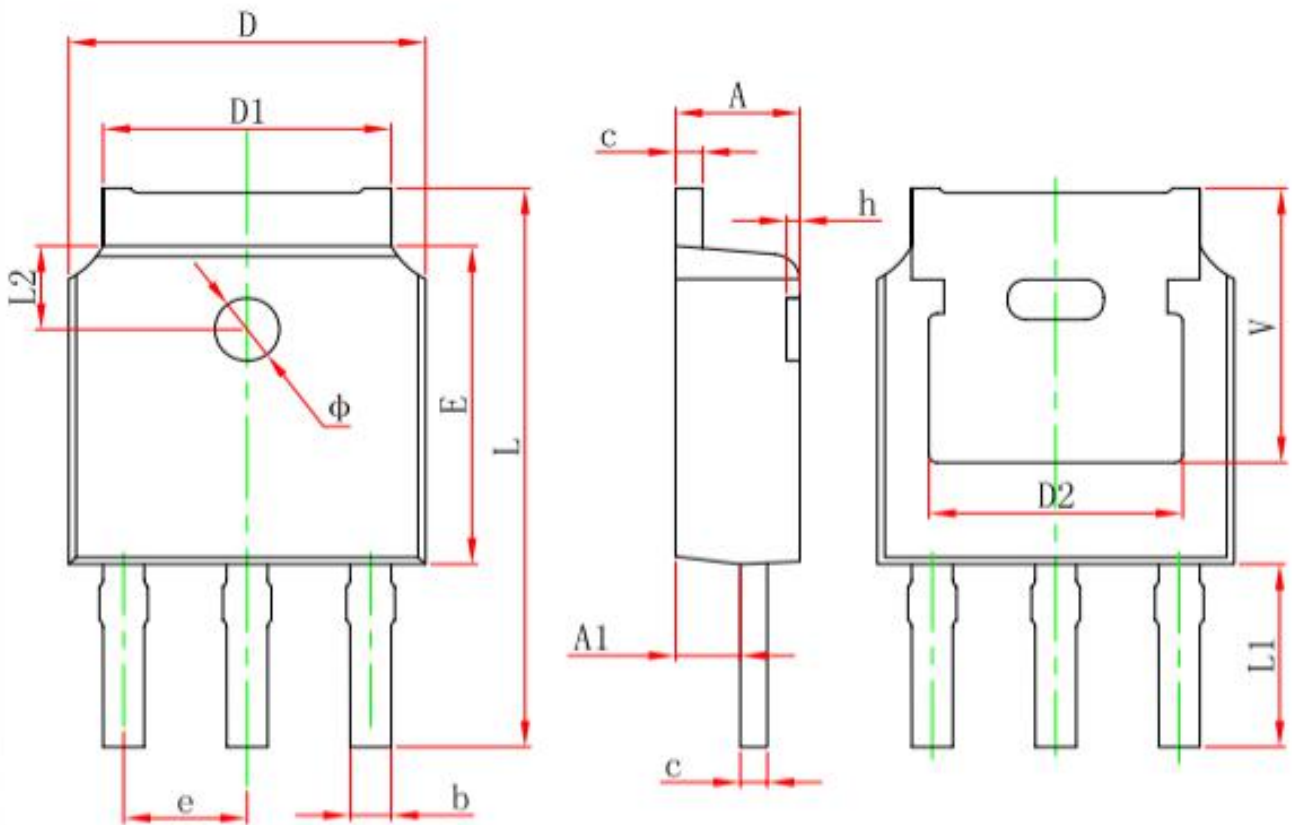
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Drain-source breakdown voltage	V(BR)DSS	VGS = 0V, ID = 250μA	600			V
Gate-source threshold voltage	VGS(th)	VDS = VGS, ID = 250μA	2		4	V
Gate-source leakage	IGSS	VDS = 0V, VGS = ±30V			±100	nA
Zero gate voltage drain current	IDSS	VDS = 600V, VGS = 0V			1	μA
Drain-source on-state resistancea	RDS(on)	VGS = 10V, ID = 2.5A		1.1	2.2	Ω
Forward transconductancea	gfs	VDS = 480V, ID = 5A	2			S
Diode forward voltage	VSD	IS = 2A, VGS = 0V		0.8	1.5	V
<b>Dynamic</b>						
Input capacitance	Ciss	VDS = 25V, VGS = 0V, f = 1MHz		532		pF
Output capacitance	Coss			57		pF
Reverse transfer capacitanceb	Crss			6.5		pF
Total gate charge	Qg	VDS = 480V, VGS = 10V, ID = 5 A		15		nC
Gate-source charge	Qgs			3		nC
Gate-drain charge	Qgd			6.6		nC
<b>Switchingb</b>						
Turn-on delay time	td(on)	VDS = 300V RL = 18Ω, ID = 4A, VGEN = 10V, Rg = 18Ω		10	30	ns
Rise time	tr			42	90	ns
Turn-off delay time	td(off)			38	85	ns
Fall time	tf			46	100	ns
<b>Drain-Source Diode Characteristics</b>						
Continuous Source-Drain Diode Current	IS				5	A
Pulsed Diode forward Curren	ISM				20	A
Body Diode Reverse Recovery Time	trr	If = 5A, dI/dt = 100A/us		300		ns
Body Diode Reverse Recovery Charge	grr	If = 5A, dI/dt = 100A/us		2.2		UC

**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.



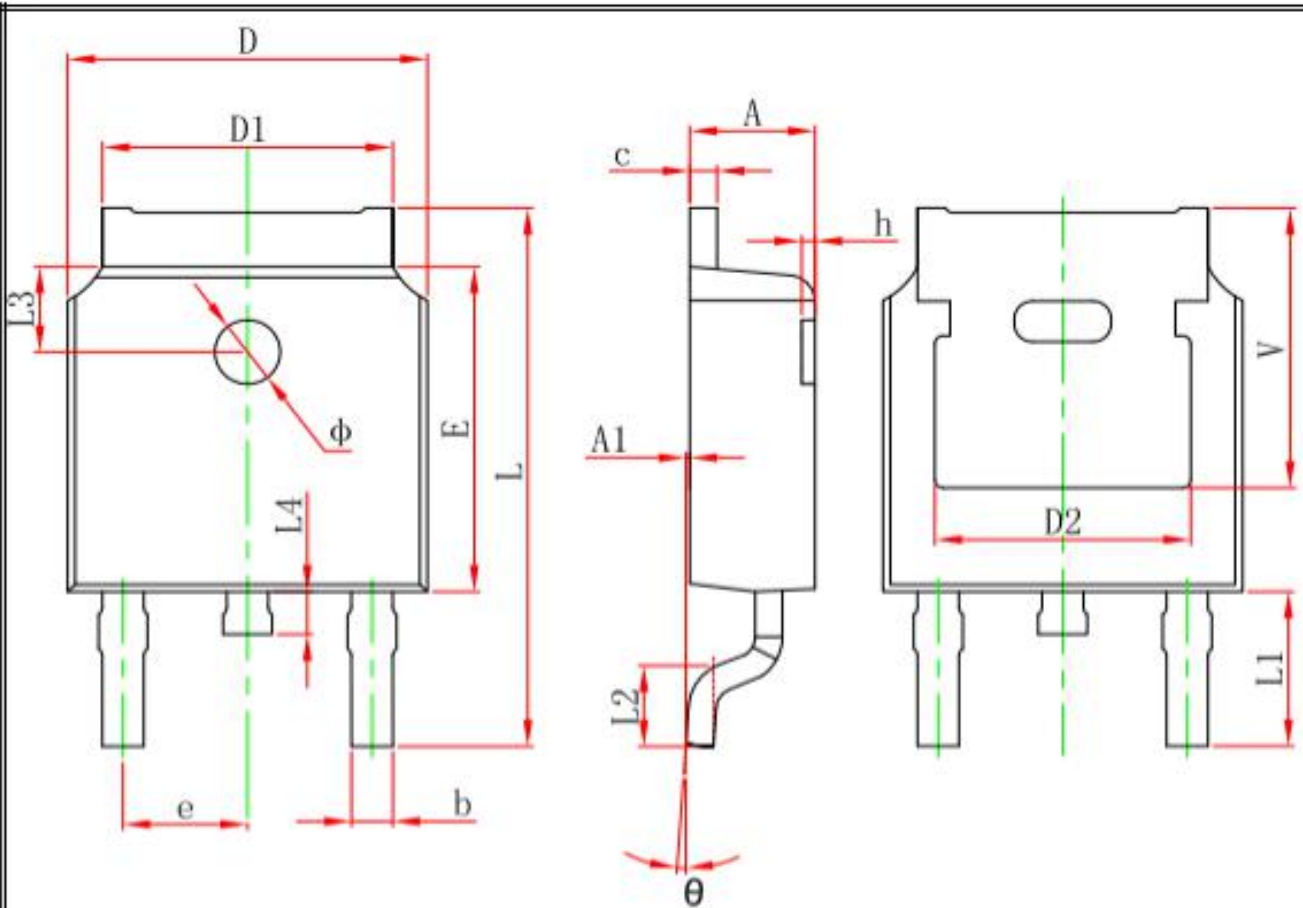
PACKAGE OUTLINE DIMENSIONS :



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.860	1.160	0.034	0.046
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	10.400	11.000	0.409	0.433
L1	3.300	3.700	0.130	0.146
L2	1.600 REF.		0.063 REF.	
$\phi$	1.100	1.300	0.043	0.051
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	



PACKAGE OUTLINE DIMENSIONS :



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	