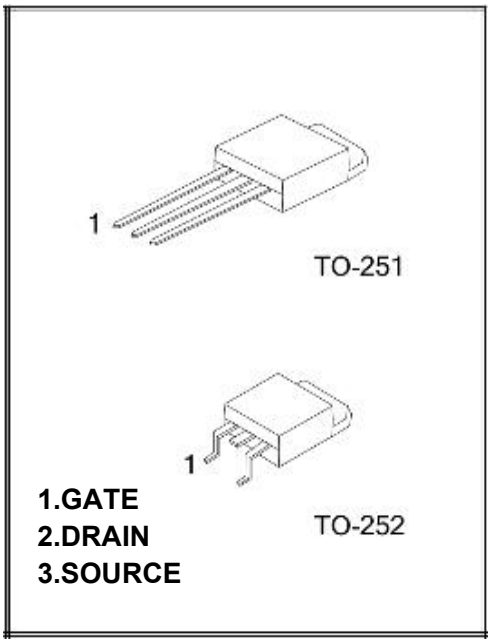
SHENZHEN MENGKE ELECTRONICS TECHNOLOGY CO.,LTD

TO-252-2L Plastic-Encapsulate MOSFETS

MK1N65 N-Channel 600-V(D-S) Power MOSFET

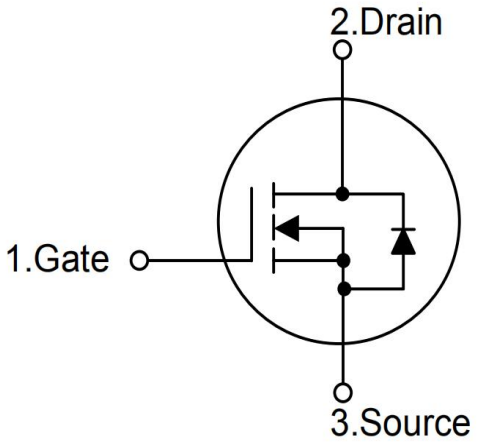
V(BR)DSS	RDS(on)MAX	ID
650V	12.5Ω@ 10V	1A



General Description:

The MK 1N65 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 :



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**	650	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)

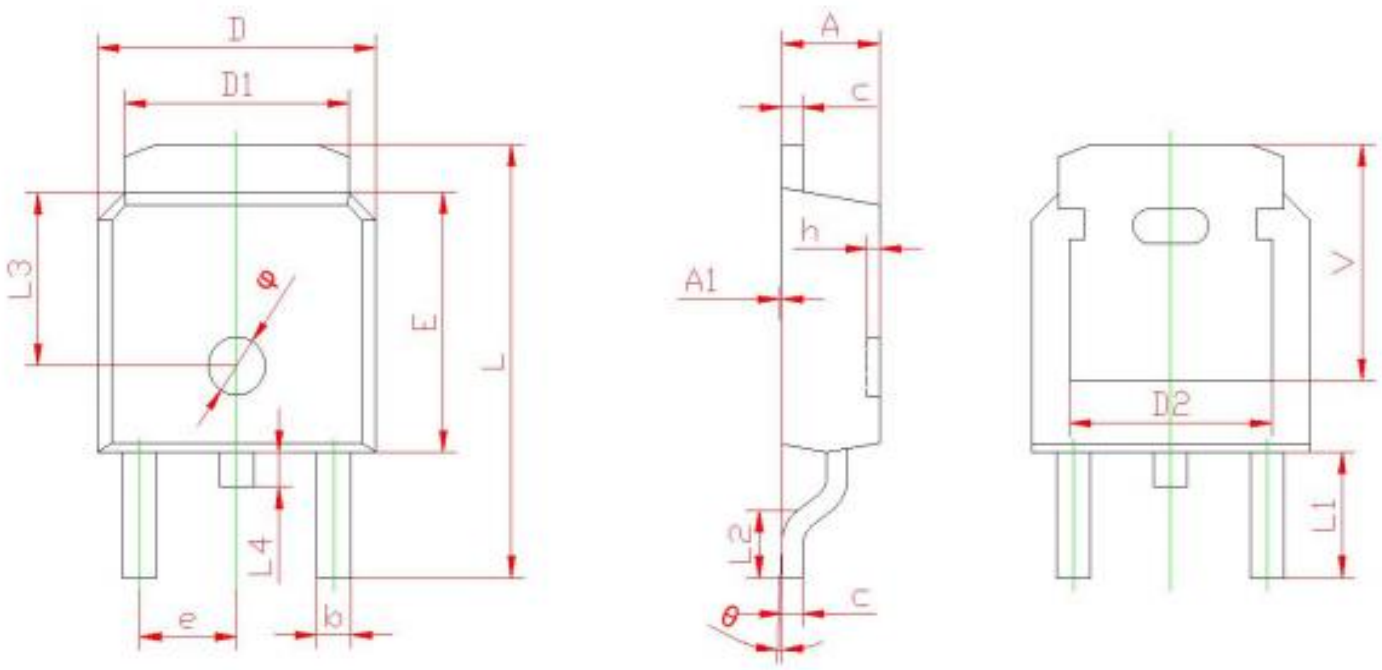
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	**V(BR)DSS**	VGS = 0V, ID = 250μA	650			V
Gate-source threshold voltage	**VGS(th)**	VDS =VGS, ID = 250μA	2		4	V
Gate-source leakage	**IGSS**	VDS =0V, VGS = ±30V			±100	nA
Zero gate voltage drain current	**IDSS**	VDS = 650V, VGS =0V			10	μA
Drain-source on-state resistancea	**RDS(on)**	VGS = 10V, ID = 1A		9.5	12.5	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 = 350V, 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= 350V 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, dI/dt=100A/us		160		ns
Body Diode Reverse Recovery Charge	**grr**	If=1.2A, dI/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 :

TO-252 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	4.800 REF		0.189 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	4.00 REF		0.157 REF	
L4	0.600	1.000	0.024	0.039
φ	1.200	1.400	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.500 REF		0.217 REF	

SHENZHEN MENGKE ELECTRONICS TECHNOLOGY CO.,LTD

RoHS-compliant Product

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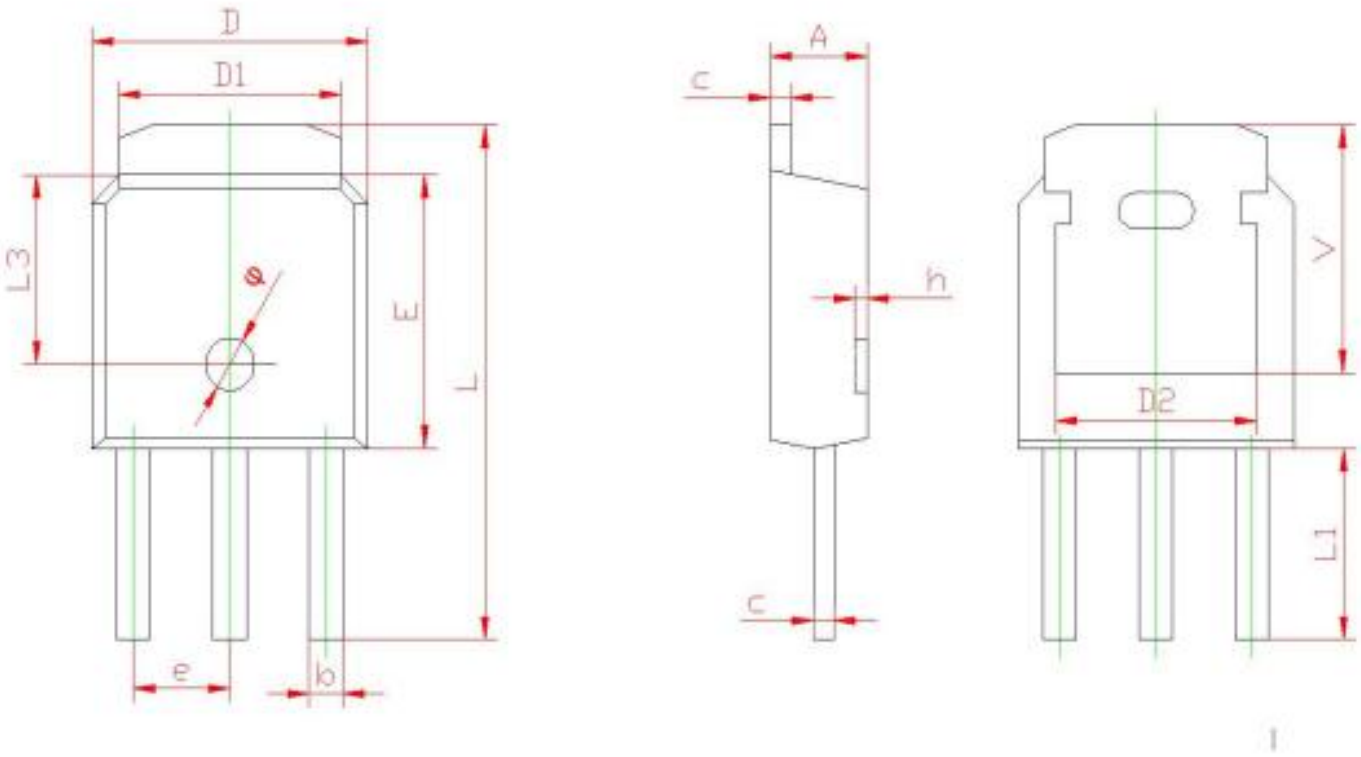

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D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.800 REF		0.189 REF	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	11.100	11.700	0.437	0.461
L1	4.300 REF		0.170 REF	
L3	4.00 REF		0.16 REF	
φ	1.200	1.400	0.043	0.051
h	0.000	0.300	0.000	0.012
V	5.500 REF		0.217 REF	