



SOT-23-3L Plastic-Encapsulate MOSFETS

**MK3404 N-Channel 30-V(D-S) MOSFET**

V(BR)DSS	RDS(on)MAX	ID
30 V	35mΩ@10V	5.8A
	47mΩ@4.5V	

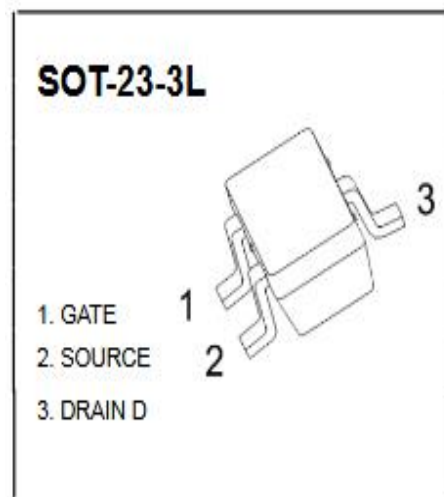
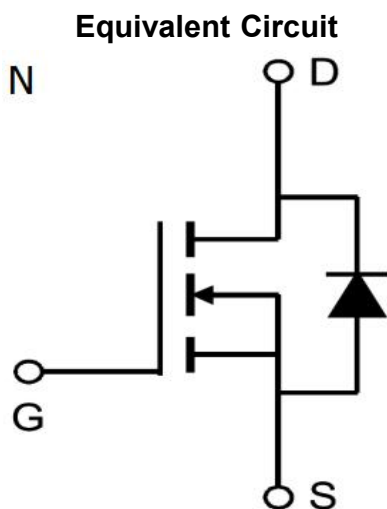
**FEATURE**

※ TrenchFET Power MOSFET

**APPLICATION**

- ※ Load Switch for Portable Devices
- ※ DC/DC Converter

**MARKING**



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	30	V
Gate-Source Voltage	VGS	±20	
Continuous Drain Current	ID	5.8	A
Pulsed Diode Current	IDM	30	
Continuous Source-Drain Current(Diode Conduction)	IS	0.8	
Power Dissipation	PD	1.4	W
Thermal Resistance from Junction to Ambient (t≤5s)	RθJA	125	°C/W
Operating Junction	TJ	150	°C
Storage Temperature	TSTG	-55~+150	°C



**MOSFET ELECTRICAL CHARACTERISTICS**

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

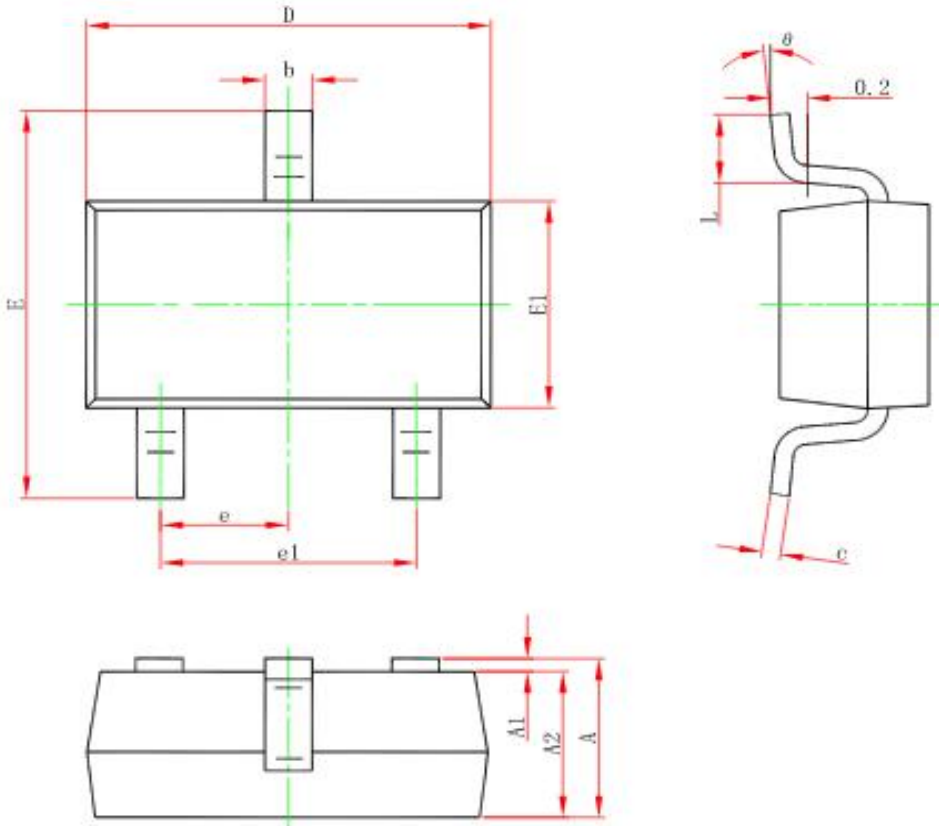
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Drain-source breakdown voltage	V(BR)DSS	VGS = 0V, ID = 250μA	30			V
Gate-source threshold voltage	VGS(th)	VDS = VGS, ID = 250μA	1		2.5	V
Gate-source leakage	IGSS	VDS = 0V, VGS = ±20V			±100	nA
Zero gate voltage drain current	IDSS	VDS = 24V, VGS = 0V			1	μA
Drain-source on-state resistancea	RDS(on)	VGS = 10V, ID = 5.8A		20	35	mΩ
		VGS = 4.5V, ID = 4.8A		27	47	mΩ
Forward transconductancea	gfs	VDS = 4.5V, ID = 5A	8			S
Diode forward voltage	VSD	IS=1A,VGS=0V		0.7	1.3	V
<b>Dynamic</b>						
Input capacitance	Ciss	VDS = 10V,VGS = 0V, f=1MHz		373		pF
Output capacitance	Coss			67		pF
Reverse transfer capacitanceb	Crss			41		pF
Total gate charge	Qg	VDS = 10V,VGS = 10V, ID = 5.2A		11		nC
Gate-source charge	Qgs			1.3		nC
Gate-drain charge	Qgd			2.8		nC
Gate resistance	Rg	f=1MHz			2.8	Ω
<b>Switchingb</b>						
Turn-on delay time	td(on)	VDD= 10V RL=3Ω, ID ≈ 1A, VGEN= 10V,Rg=3Ω			6.5	ns
Rise time	tr			3.1		ns
Turn-off delay time	td(off)			15.1		ns
Fall time	tf			2.7		ns
<b>Drain-source body diode characteristics</b>						
Continuous Source-Drain Diode Current	IS	Tc=25°C			1.3	A
Body Diode Reverse Recovery Time	Trr	IF= 5.8A, dI/dt=100A/μs		11		ns
Body Diode Reverse Recovery Charge	Qrr	IF= 5.8A, dI/dt=100A/μs		4.5		nC

**Note :**

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 5 sec.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.



SOT-23-3L PACKAGE OUTLINE DIMENSIONS

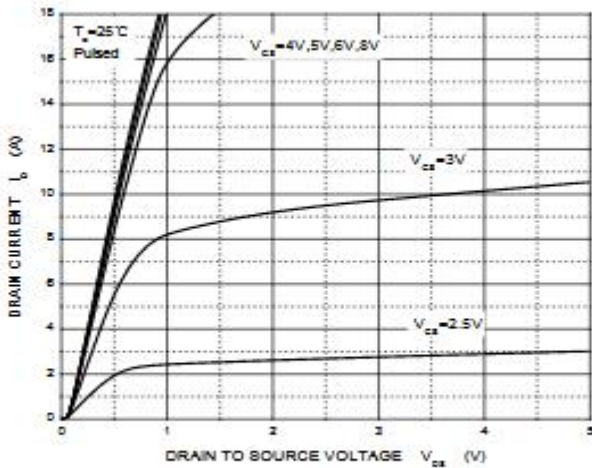


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
theta	0°	8°	0°	8°

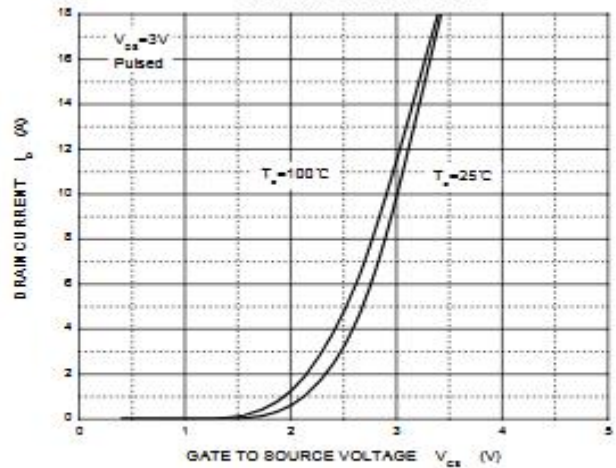


Typical Characteristics:

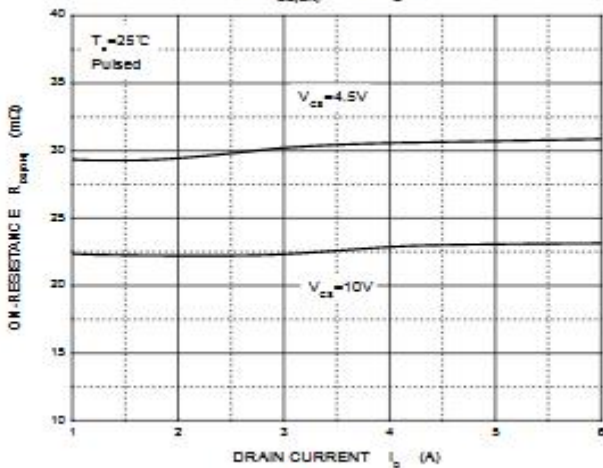
Output Characteristics



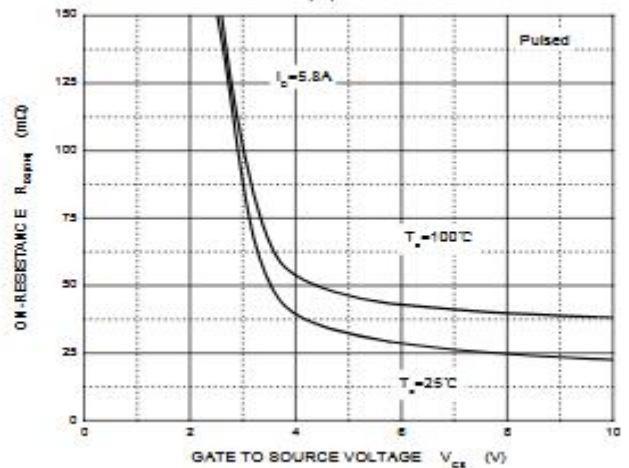
Transfer Characteristics



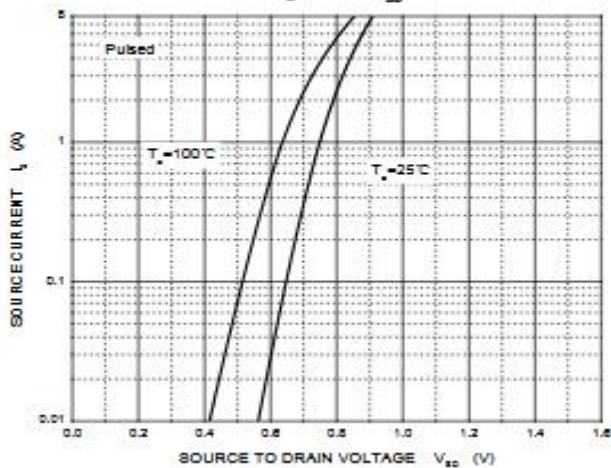
$R_{DS(on)}$  —  $I_D$



$R_{DS(on)}$  —  $V_{GS}$



$I_S$  —  $V_{SD}$



Threshold Voltage

