



SOT-23 Plastic-Encapsulate MOSFETS

MK3400

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

V(BR)DSS	RDS(on)MAX	ID
30 V	40mΩ@10V	5.8A
	60mΩ@4.5V	
	80mΩ@2.5V	

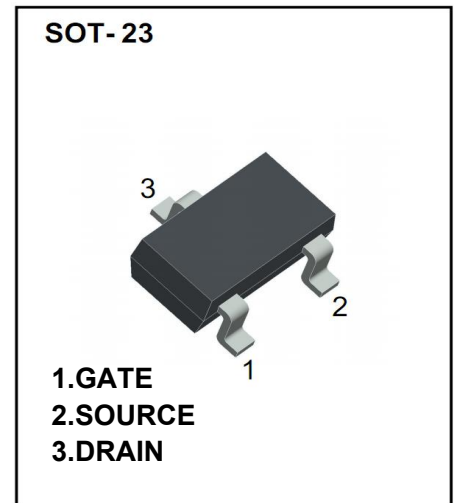
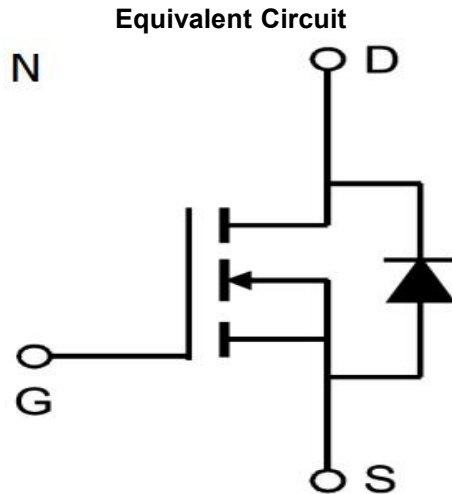
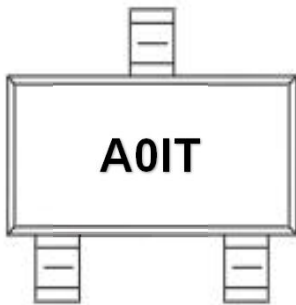
FEATURE

- ※ TrenchFET Power MOSFET
- ※ Exceptional on-resistance and maximum DC current capability
- ※ High dense cell design for extremely low RDS(ON)

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	±12	
Continuous Drain Current	ID	5.8	A
Pulsed Diode Curren	IDM	30	
Continuous Source-Drain Current(Diode Conduction)	IS	0.72	
Power Dissipation	PD	0.5	W
Thermal Resistance from Junction to Ambient (t≤5s)	RθJA	357	°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)

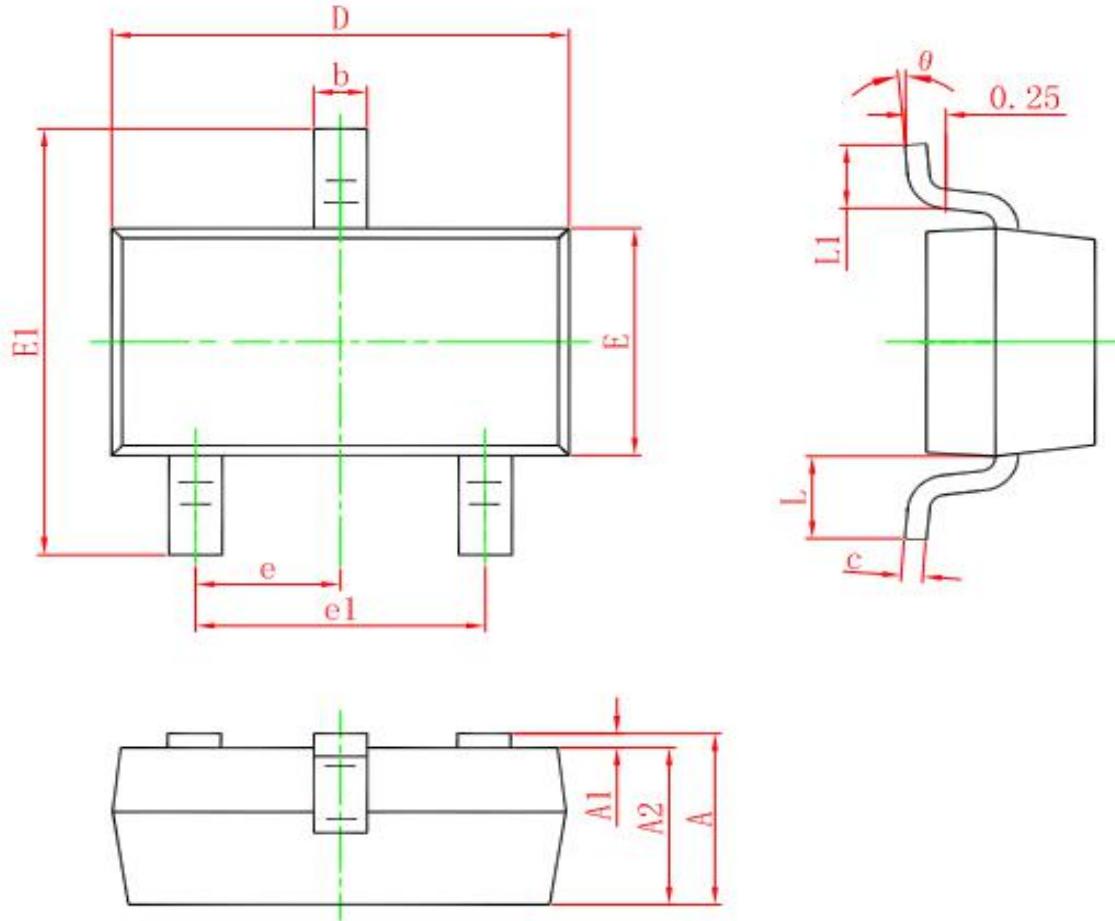
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	V(BR)DSS	VGS = 0V, ID = 250μA	30			V
Gate-source threshold voltage	VGS(th)	VDS = VGS, ID = 250μA	0.6		1.2	V
Gate-source leakage	IGSS	VDS = 0V, VGS = ±12V			±100	nA
Zero gate voltage drain current	IDSS	VDS = 30V, VGS = 0V			1	μA
Drain-source on-state resistancea	RDS(on)	VGS = 10V, ID = 5.8A		24	40	mΩ
		VGS = 4.5V, ID = 4.8A		27	60	mΩ
		VGS = 2.5V, ID = 4A		37	80	mΩ
Forward transconductancea	gfs	VDS = 4.5V, ID = 5.8A		33		S
Diode forward voltage	VSD	IS=1A, VGS=0V		0.7	1.3	V
Dynamic						
Input capacitance	Ciss	VDS = 15V, VGS = 0V, f=1MHz		630		pF
Output capacitance	Coss			75		pF
Reverse transfer capacitanceb	Crss			50		pF
Total gate charge	Qg	VDS = 15V, VGS = 4.5V, ID = 5.8A		6	12	nC
Gate-source charge	Qgs			1.3		nC
Gate-drain charge	Qgd			1.8		nC
Gate resistance	Rg	f=1MHz			4.5	Ω
Switchingb						
Turn-on delay time	td(on)	VDD= 15V RL=8Ω, ID ≈ 1A, VGEN= 4.5V, Rg=6Ω		4		ns
Rise time	tr			3		ns
Turn-off delay time	td(off)			25		ns
Fall time	tf			4		ns
Drain-source body diode characteristics						
Continuous Source-Drain Diode Current	IS	Tc=25°C			2	A
Pulsed Diode forward Curren	ISM				20	A

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 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°



TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

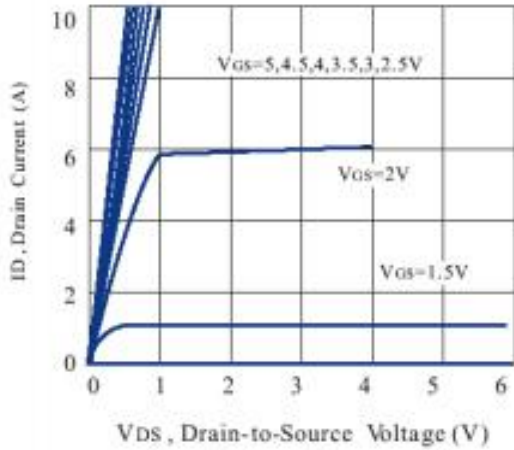


Figure 1. Output Characteristics

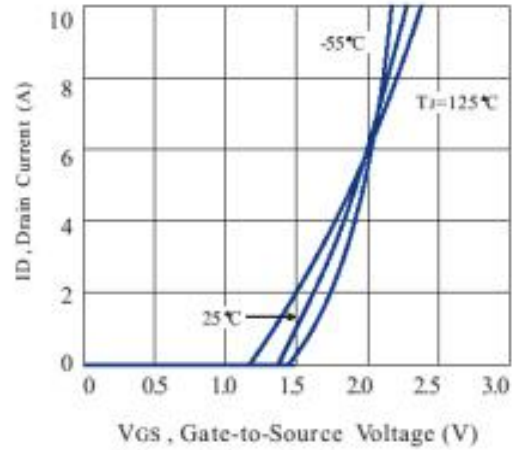


Figure 2. Transfer Characteristics

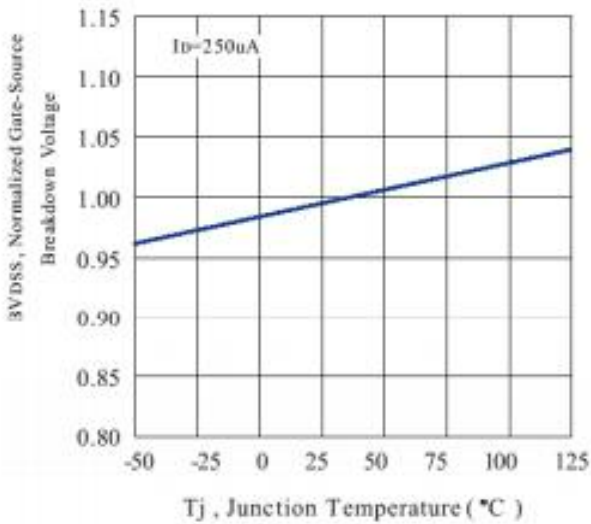


Figure 3. Breakdown Voltage Variation with Temperature

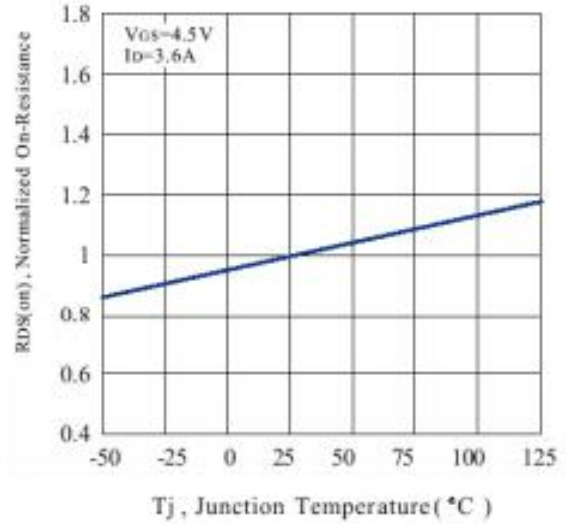


Figure 4. On-Resistance Variation with Temperature

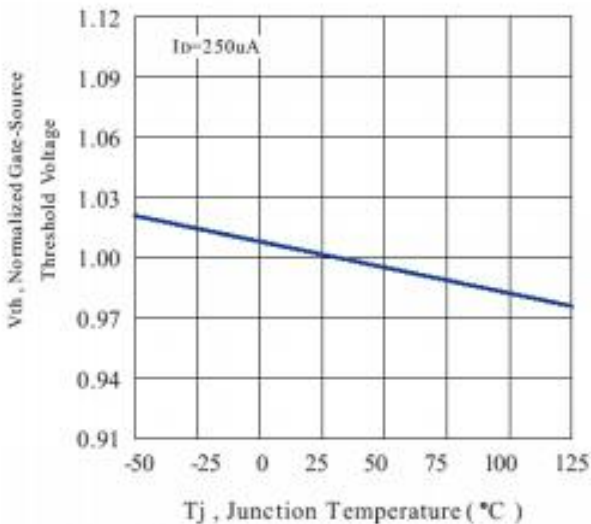


Figure 5. Gate Threshold Variation with Temperature

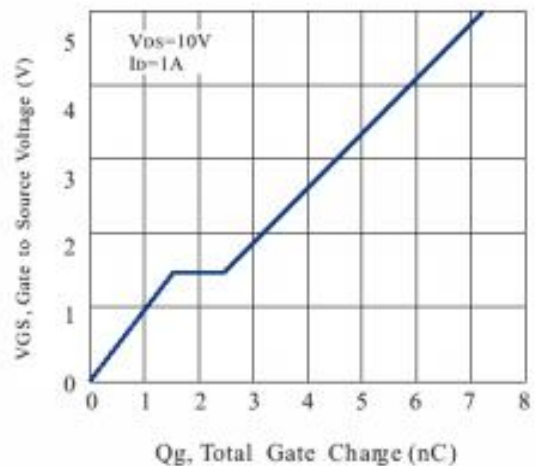


Figure 6. Gate Charge