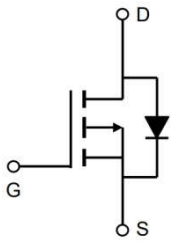
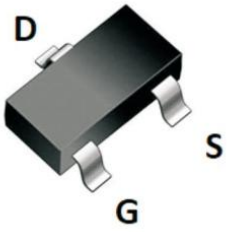
-30V P-Channel Enhancement Mode Field Effect Transistor

MAIN CHARACTERISTICS

I_D	-12A
V_{DSS}	-30V
R_{DSON}-typ(@V_{GS}=-10V)	＜27mΩ(Typ:21mΩ)
R_{DSON}-typ(@V_{GS}=-4.5V)	＜37mΩ(Typ:29mΩ)





SOT23-3L

Marking Code	
YFW3409MI	3409M

FEATURES

- Trench FET Power MOSFET
- Load Switch for Portable Devices
- DC/DC Converter
- Moisture Sensitivity Level 3

MECHANICAL DATA

- Case: SOT23-3L
- Epoxy UL: 94V-0
- Mounting Position: Any

Absolute Maximum Ratings (Ta=25℃ unless otherwise noted)

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-12	A
Pulsed Drain Current (note 1)	I_{DM}	-48	
Power Dissipation	P_D	1.5	W
Junction Temperature	T_J	-55-+150	℃
Storage Temperature	T_{STG}	-55-+150	℃
Thermal Resistance From Junction to Ambient (note 2)	$R_{\theta JA}$	83.3	℃/W

Electrical Characteristics (Ta=25℃,unless otherwise noted)

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=-250uA	BV_{DSS}	-30			V
Gate-Threshold voltage (note3)	V_{DS}=V_{GS}, I_D=-250uA	$V_{GS\ (th)}$	-1.0	-1.5	-2.5	V
Gate-body Leakage	V_{DS}=0V, V_{GS}=±20V	I_{GSS}			±100	nA
Zero Gate Voltage Drain current	V_{DS}=-30V, V_{GS}=0V	I_{DSS}			1.0	uA
Drain-Source On-Resistance (note3)	V_{GS}=-10V, I_D=-7A	$R_{DS(ON)}$		21	27	mΩ
	V_{GS}=-4.5V, I_D=-4A			29	37	
Diode forward voltage	I_S=-5A, V_{GS}=0V	V_{SD}			-1.2	V
Input capacitance	V_{DS}=-15V V_{GS}=0V f=1MHz	C_{iss}		890		pF
Output capacitance		C_{oss}		112		
Reverse Transfer capacitance		C_{rss}		90		
Total gate charge	V_{DS}=-15V V_{GS}=0 to -10V I_D=-5.0A	Q_g		17		nC
Gate-source charge		Q_{gs}		3		
Gate-drain charge		Q_{gd}		4		
Turn-on Time	V_{DD}=-150V V_{GS}=-10V I_D=-5A RGEN=7.5Ω	$t_{d(on)}$		4		ns
Rise time		T_r		2		
Turn-off Time		$t_{d(OFF)}$		37		
Fall time		t_f		26		

Notes :
1. Repetitive rating : Pulse width limited by Maximum junction temperature.
2. RθJA is measured with the device mounted on a 1inch² pad of 2oz copper FR4 PCB
3. Pulse Test: Pulse Width ≤300us, Duty Cycle≤0.5%.

Typical characteristics

Figure 1: Output Characteristics

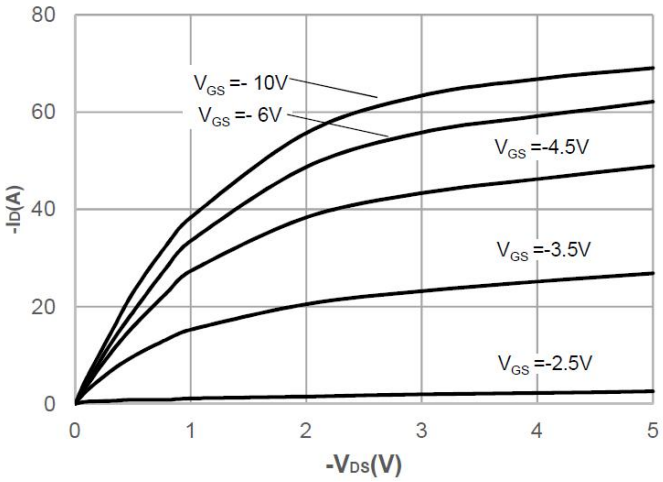


Figure 2: Typical Transfer Characteristics

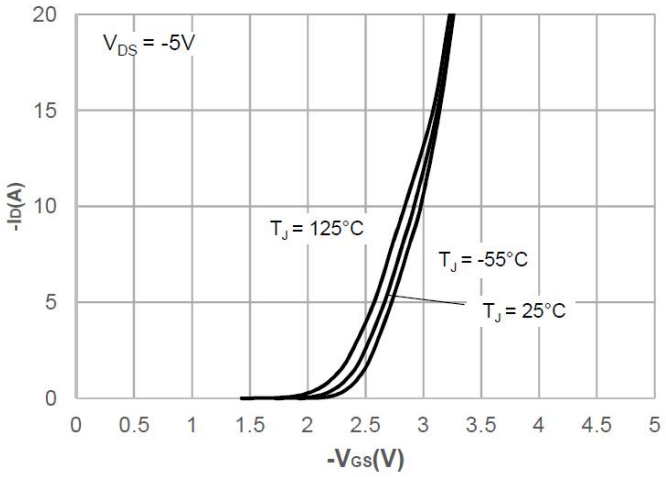


Figure 3: On-resistance vs. Drain Current

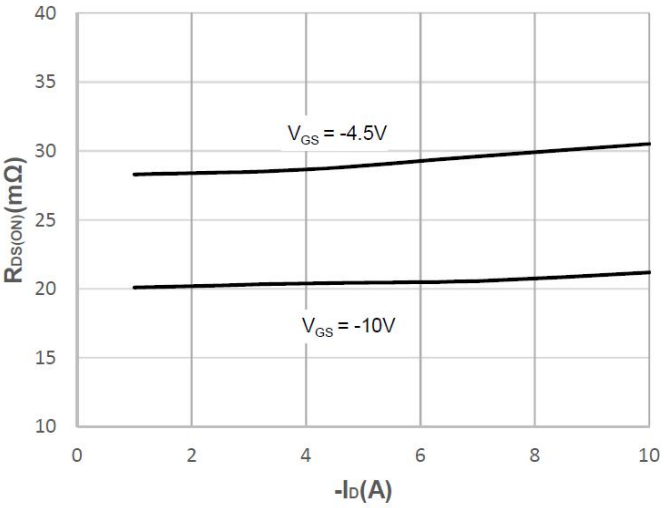


Figure 4: Body Diode Characteristics

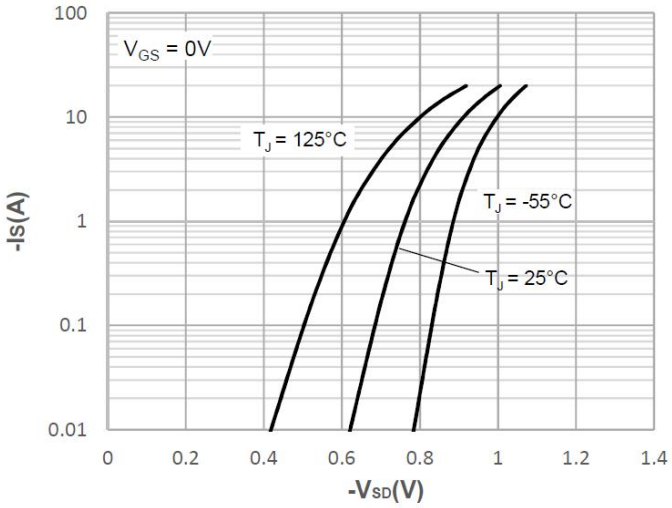


Figure 5: Gate Charge Characteristics

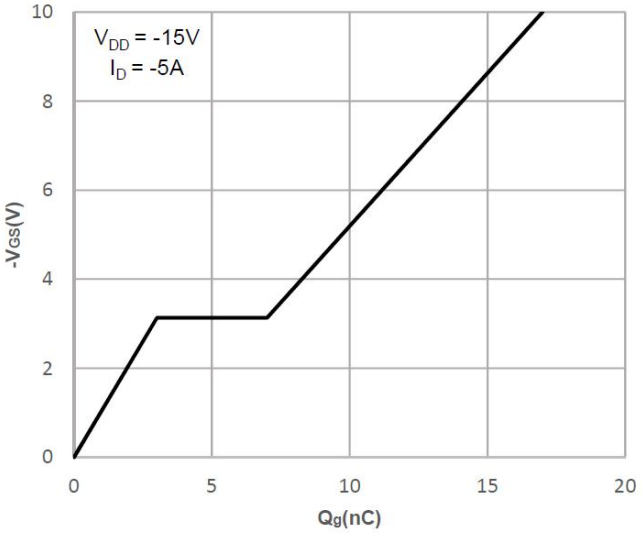
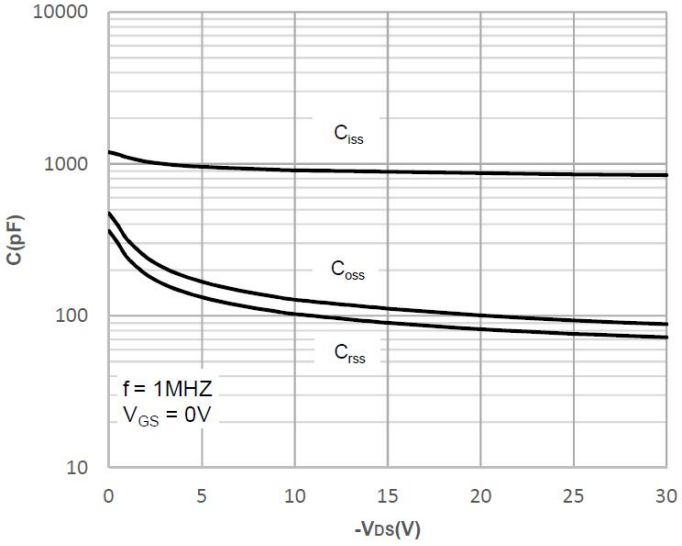


Figure 6: Capacitance Characteristics

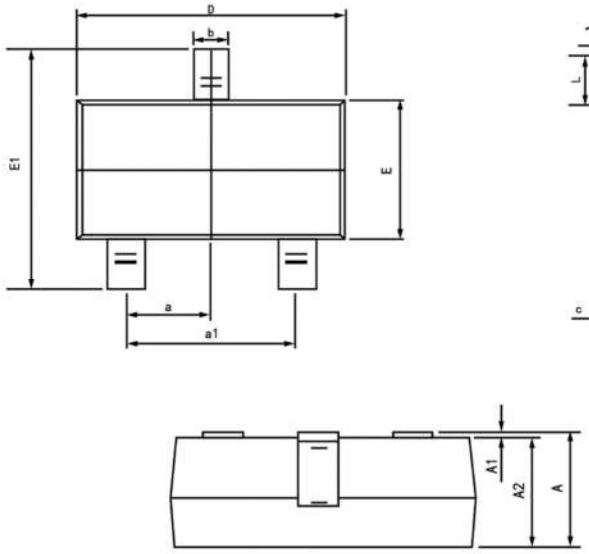


Ordering information

Package	Packing Description	Base Quantity	Packing Quantity
SOT23-3L	Tape/Reel,7"reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

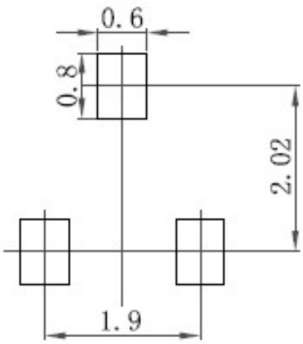
Package Dimensions

SOT23-3L



Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	1.05	1.25	41	49.2
A1	0.10		3.93	
A2	1.05	1.15	41	45
b	0.30	0.50	12	20
c	0.10	0.20	3.93	7.9
D	2.82	3.02	111	119
E	1.50	1.70	59	67
E1	2.65	2.95	104	116
e	0.95		37.4	
e1	1.80	2.00	71	78
L	0.30	0.066	12	26
Θ	8°			

The recommended mounting pad size



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