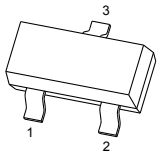
JSMICRO
SEMICONDUCTOR

JSM3407L

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

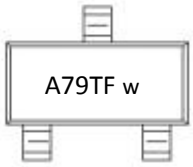
$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
-30V	0.055Ω@-10V	-4.1A
	0.075Ω@-4.5V	

SOT-23



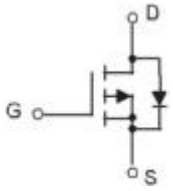
1.GATE
2.SOURCE
3.DRAIN

MARKING



*w：week code

Equivalent Circuit



General FEATURE

- TrenchFET Power MOSFET
- Lead free product is acquired
- Surface mount package

APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	-4.1	A
Pulsed Drain Current	I_{DM}	-20	
Maximum Power Dissipation	P_D	1.4	W
Thermal Resistance from Junction to Ambient(t ≤5s)	$R_{\theta JA}$	84	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-55 ~+150	

MOSFET ELECTRICAL CHARACTERISTICS

T_a =25 ℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS} = 0V, I_D =-250μA	-30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-24V,V_{GS} = 0V			-1	μA
Gate-source leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Drain-source on-resistance (note a)	$R_{DS(on)}$	V_{GS} =-10V, I_D =-4.1A		50	55	mΩ
		V_{GS} =-4.5V, I_D =-3A		65	75	mΩ
Forward tranconductance (note a)	g_{FS}	V_{DS} =-5V, I_D =-4.1A	5.5			S
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1	-1.4	-3	V
Diode forward voltage (note a)	V_{SD}	I_S=-1A,V_{GS}=0V			-1	V
Dynamic characteristics (note b)						
Input capacitance	C_{iss}	V_{DS} =-15V,V_{GS} =0V,f =1MHz		700		pF
Output capacitance	C_{oss}			120		pF
Reverse transfer capacitance	C_{rss}			75		pF
Switching Characteristics (note b)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=-10V,V_{DS}=-15V, R_L=3.6Ω,R_{GEN}=3Ω		9.0		ns
Turn-on rise time	t_r			5.0		ns
Turn-off delay time	$t_{d(off)}$			28.2		ns
Turn-off fall time	t_f			13.5		ns

Notes:

a.Pulse Test : Pulse Width < 300μs, Duty Cycle ≤2%.

b.These parameters have no way to verify.

Typical Electrical and Thermal Characteristics

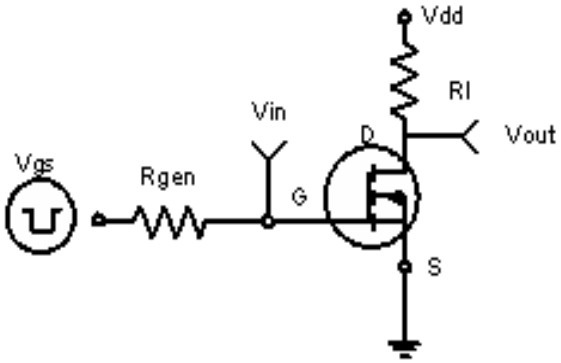


Figure 1:Switching Test Circuit

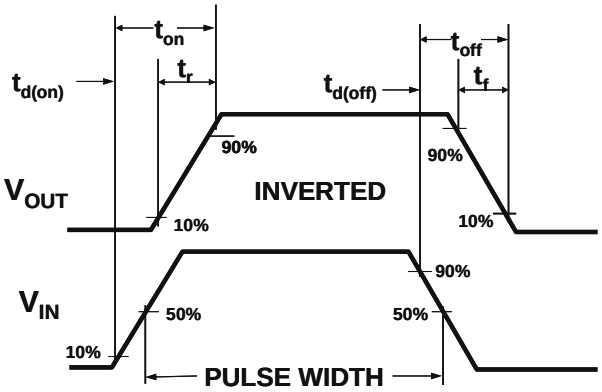


Figure 2:Switching Waveforms

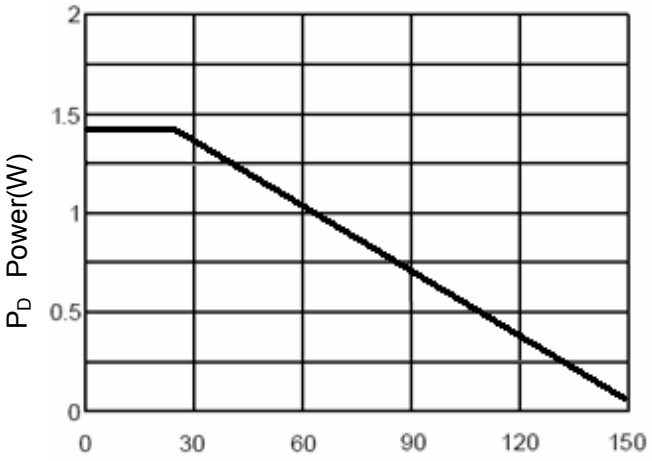


Figure 3 Power Dissipation

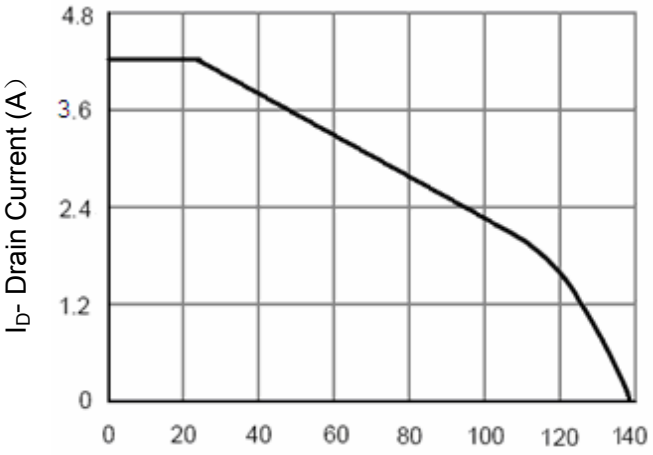


Figure 4 Drain Current

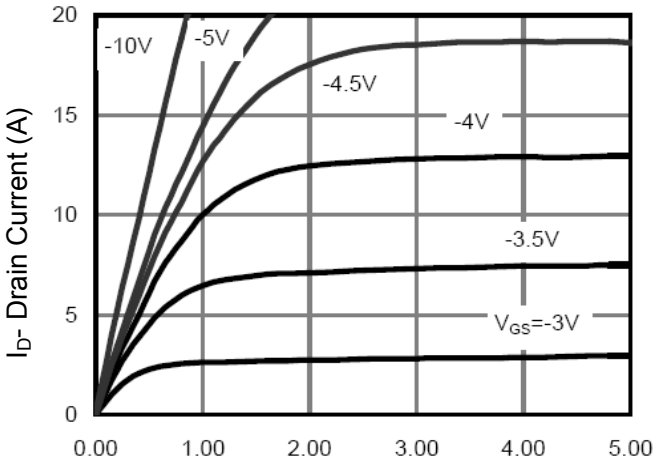


Figure 5 Output Characteristics

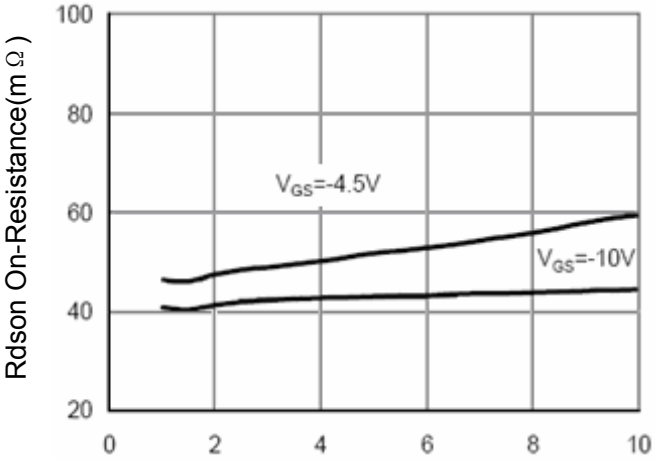


Figure 6 Drain-Source On-Resistance

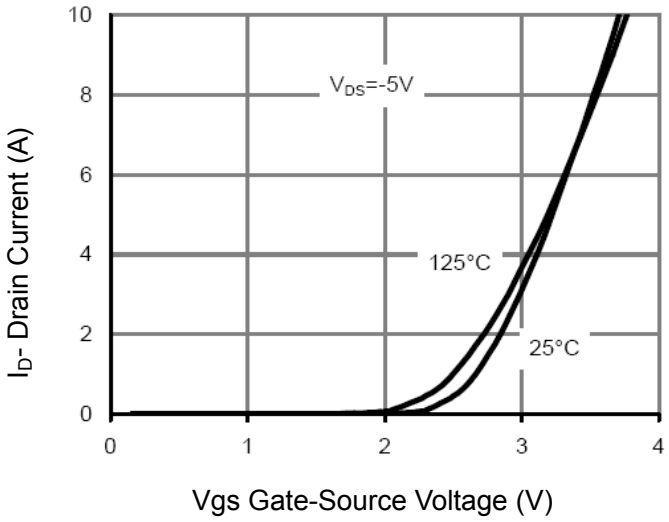


Figure 7 Transfer Characteristics

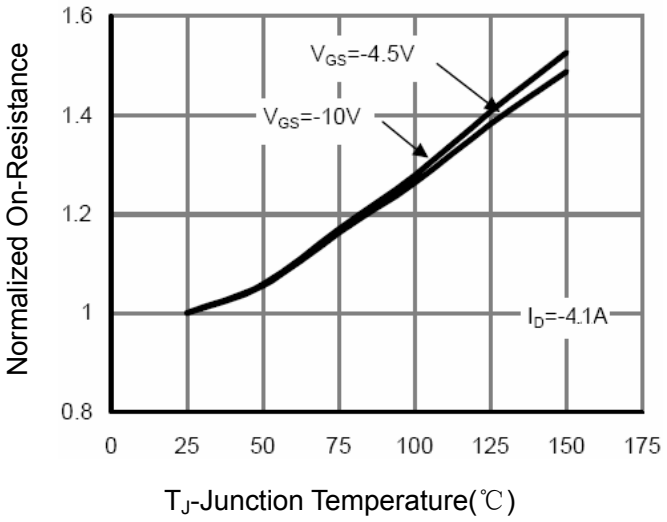


Figure 8 Drain-Source On-Resistance

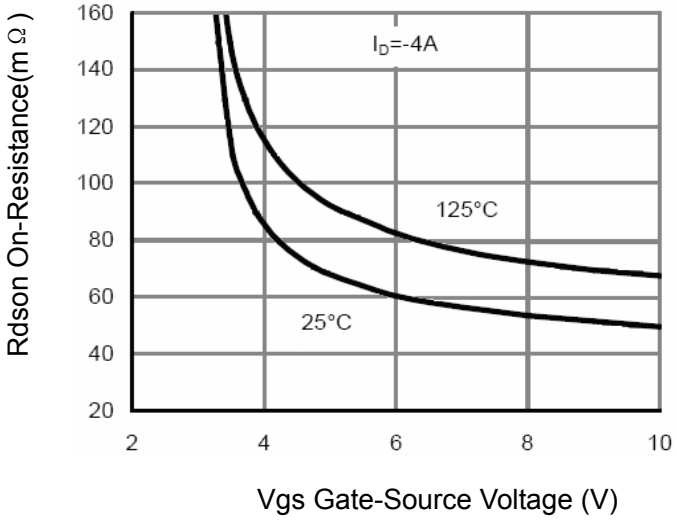


Figure 9 Rdson vs Vgs

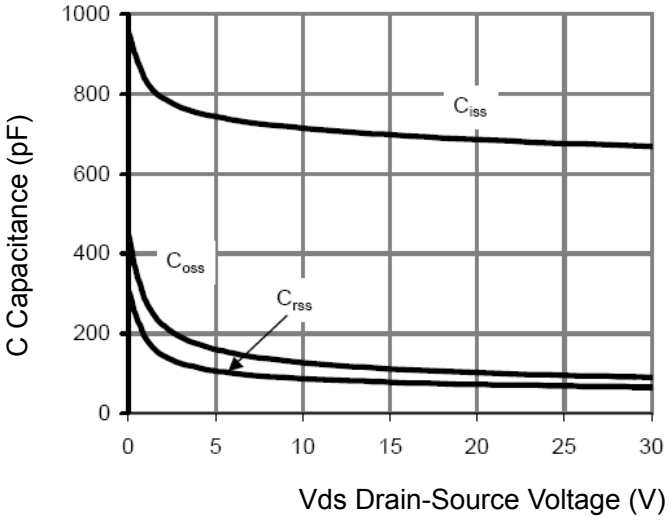


Figure 10 Capacitance vs Vds

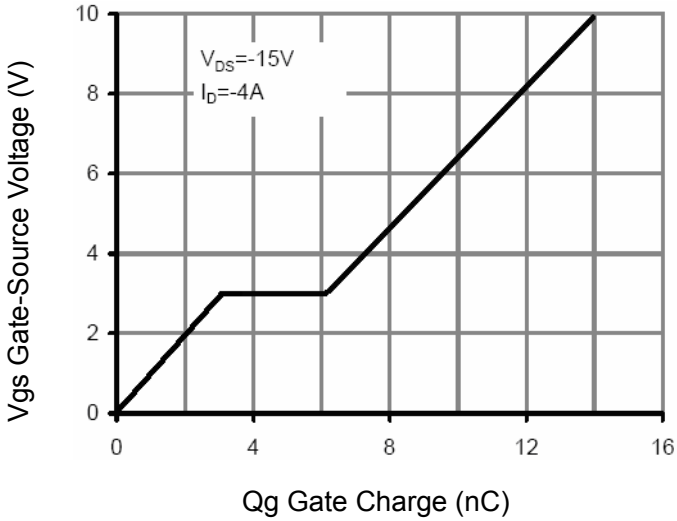


Figure 11 Gate Charge

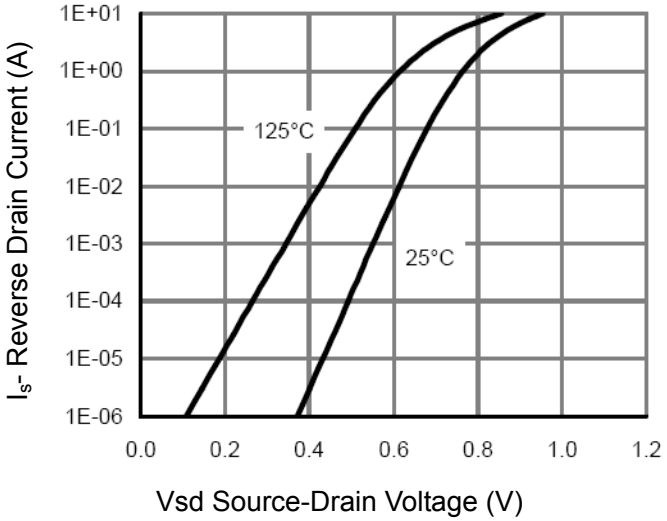


Figure 12 Source- Drain Diode Forward

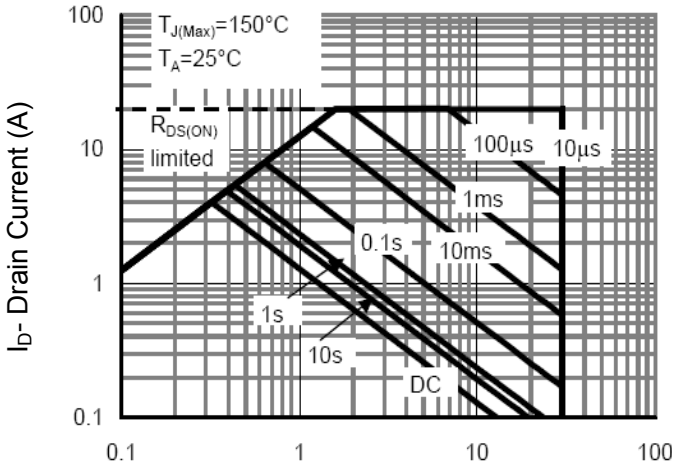


Figure 13 Safe Operation Area

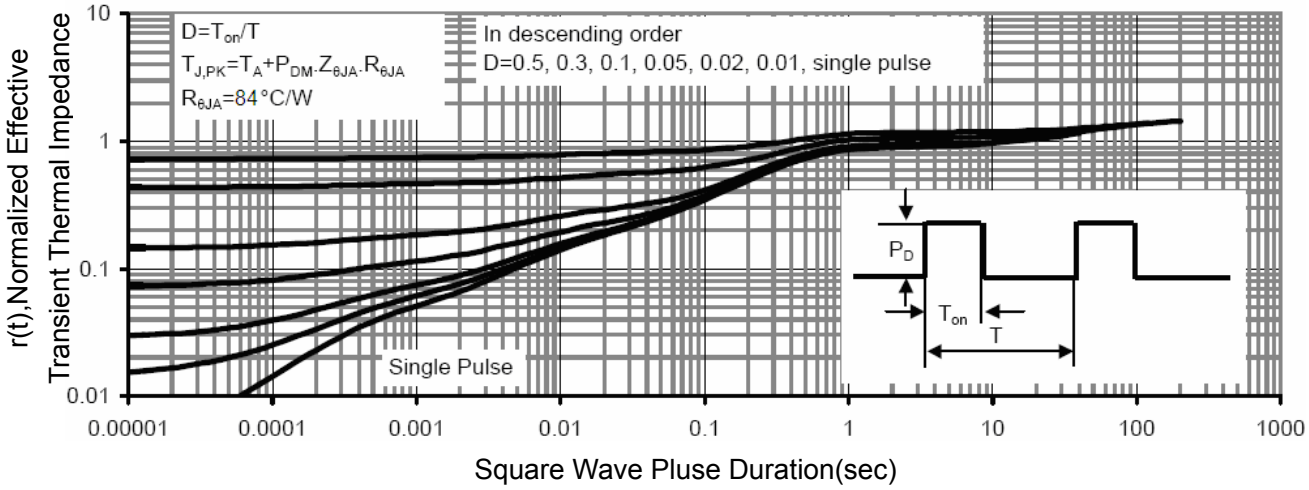
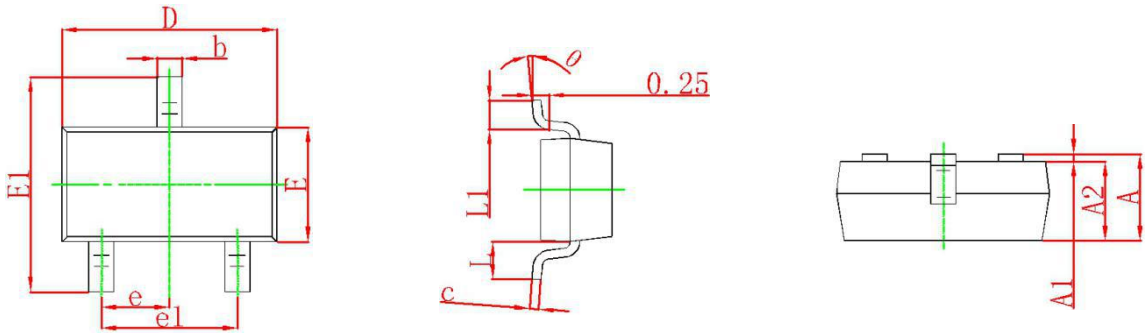


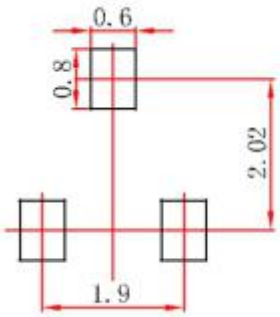
Figure 14 Normalized Maximum Transient Thermal Impedance

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°

SOT-23 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.