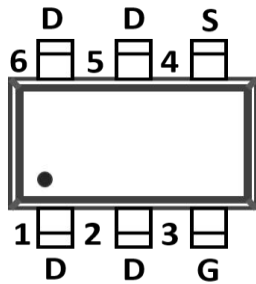
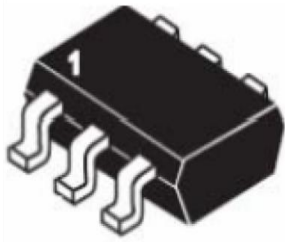
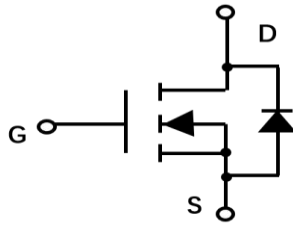


N-Channel Enhancement Mode Power MOSFET



SOT-23-6L



Product Summary

- V_{DS} 100V
- I_D 3A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) < 120 mohm
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) < 140 mohm
- 100% UIS Tested
- 100% ∇V_{DS} Tested

General Description

- Trench Power HV MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$

Applications

- DC-DC Converters
- Power management functions

■ Absolute Maximum Ratings ($T_A=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	100	V
Gate-source Voltage	V_{GS}	± 20	V
Drain Current	I_D	$T_A=25^\circ C$	3
		$T_A=70^\circ C$	2.4
Pulsed Drain Current ^A	I_{DM}	12	A
Single Pulse Avalanche Energy	E_{AS}	8	mJ
Total Power Dissipation @ $T_A=25^\circ C$	P_D	1.5	W
Thermal Resistance Junction-to-Ambient ^B	$R_{\theta JA}$	83	$^\circ C/W$
Thermal Resistance From Junction To Lead	R_{thJL}	36	$^\circ C/W$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ C$

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
LM6L3N10A	F2	1003	3000	30000	120000	7" reel

■ Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	1.1	1.8	3.0	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 10V, I _D =3A		95	120	mΩ
		V _{GS} = 4.5V, I _D =2.4A		100	140	
Diode Forward Voltage	V _{SD}	I _S =3A, V _{GS} =0V		0.8	1.2	V
Maximum Body-Diode Continuous Current	I _S				3	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, f=1MHZ		800		pF
Output Capacitance	C _{oss}			40		
Reverse Transfer Capacitance	C _{rss}			32		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =80V, I _D =2.5A		16		nC
Gate-Source Charge	Q _{gs}			2.5		
Gate-Drain Charge	Q _{gd}			2.6		
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =50V, R _L =6.4Ω R _{GEN} =3Ω		15		ns
Turn-on Rise Time	t _r			5		
Turn-off Delay Time	t _{D(off)}			30		
Turn-off fall Time	t _f			5		

A. Pulse Test: Pulse Width ≤ 300us, Duty cycle ≤ 2%.

B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Typical Performance Characteristics

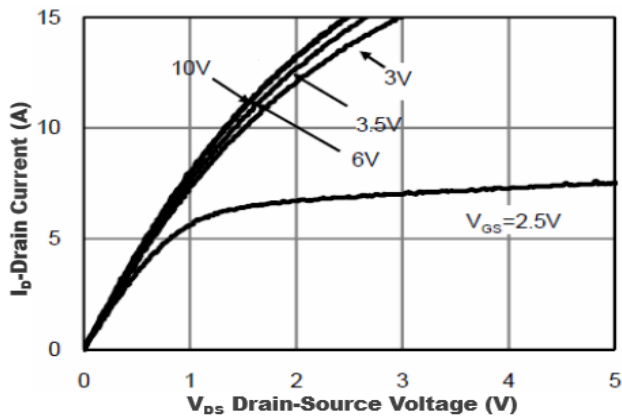


Figure1. Output Characteristics

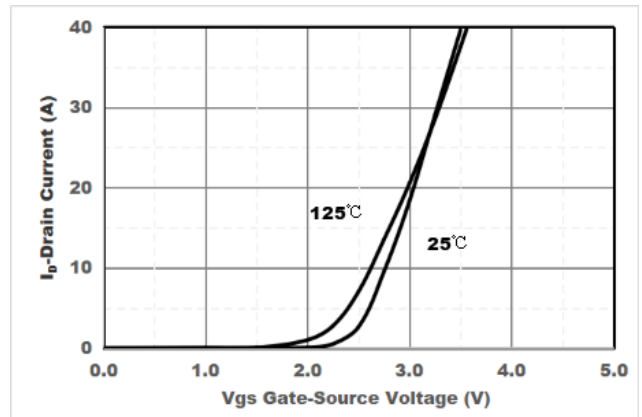


Figure2. Transfer Characteristics

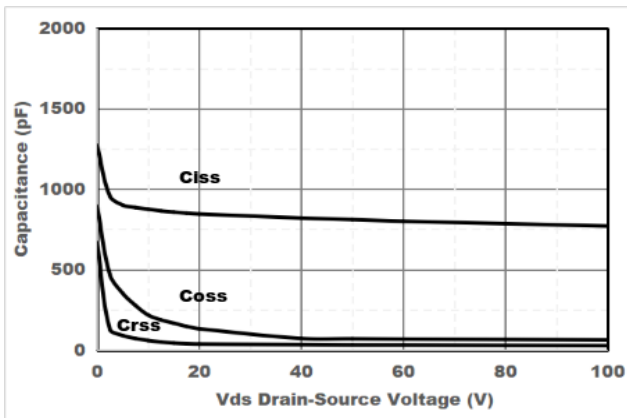


Figure3. Capacitance Characteristics

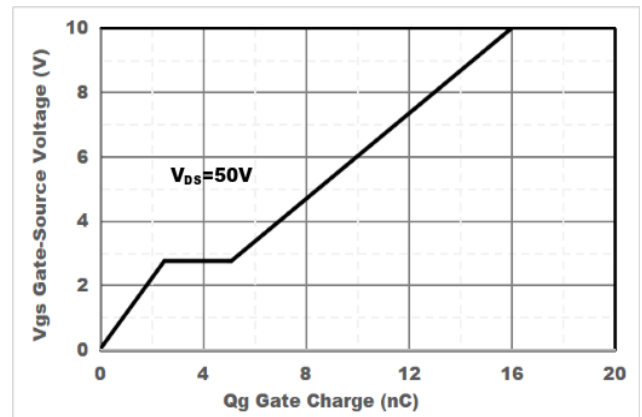


Figure4. Gate Charge

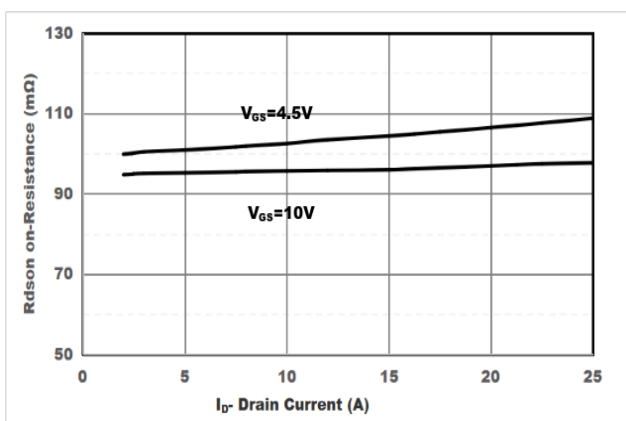


Figure5. Drain-Source on Resistance

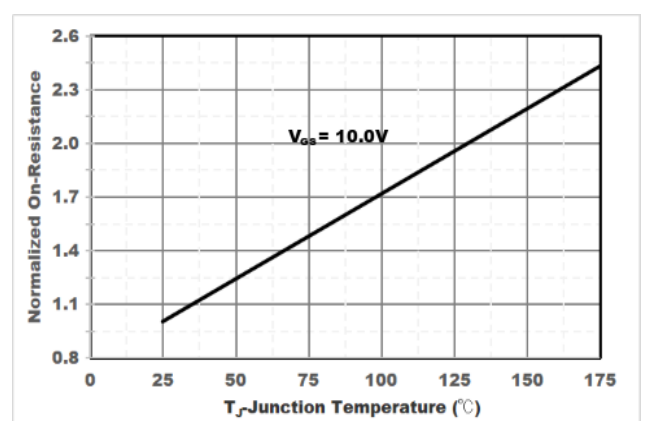


Figure6. Drain-Source on Resistance

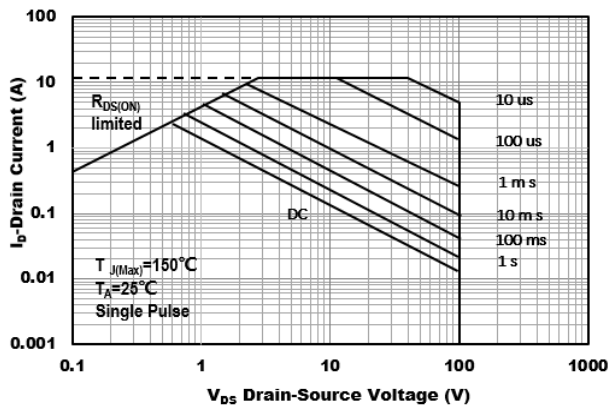


Figure7. Safe Operation Area

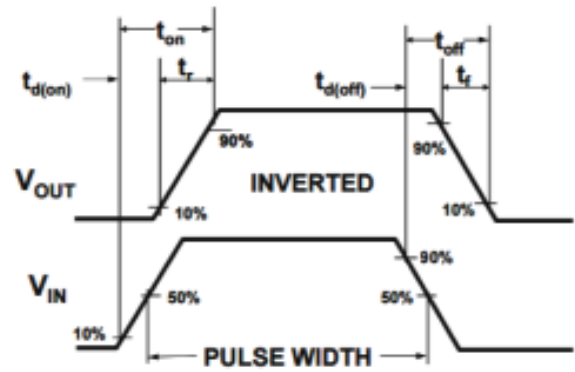
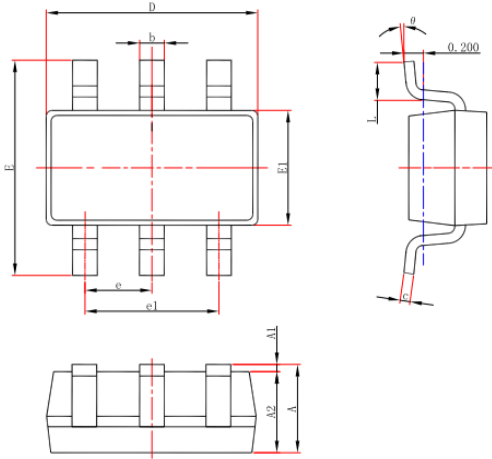


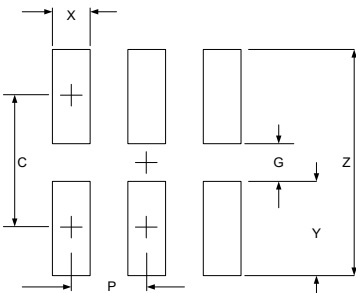
Figure8. Switching wave

SOT-23-6L Package information



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
θ	0°	8°	0°	8°

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	2.50	0.098
G	1.40	0.055
P	0.95	0.037
X	0.60	0.024
Y	1.10	0.043
Z	3.60	0.141