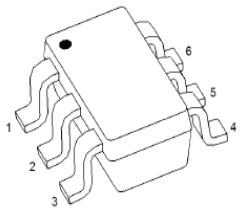
GP03P06L

60V P-Channel MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-60V	80mΩ@-10V	-3A
	95mΩ@-4.5V	

SOT-23-6L



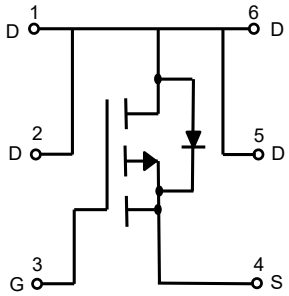
Feature

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$ and Low Gate Charge

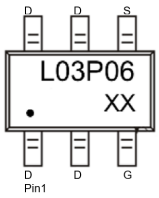
Application

- Power switching application
- Hard switched and high frequency circuits
- DC-DC Converter

Schematic diagram



MARKING:



L03P06 = Device Code

XX = Date Code

ABSOLUTE MAXIMUM RATINGS (T_A = 25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current[1,2]	I_D	-3	A
Plused Drain Current	I_{DM}	-12	A
Power Dissipation	P_D	2	W
Thermal Resistance from Junction to Ambient[1,2]	$R_{\theta JA}$	62.5	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS (T_A = 25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain-source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = -250μA	-60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -48V,V_{GS} = 0V			-1	μA
Gate-body Leakage Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V			±100	nA
On Characteristics[3]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-1.0	-1.6	-3.0	V
Drain-source On-resistance	$R_{DS(on)}$	V_{GS} = -10V, I_D = -3A		80	115	mΩ
		V_{GS} = -4.5V, I_D = -1.6A		95	150	
Forward Tranconductance	g_{FS}	V_{DS} = -15V, I_D = -3A	3			S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} = -30V, V_{GS} = 0V,F = 1.0MHz		770		pF
Output Capacitance	C_{oss}			61		
Reverse Transfer Capacitance	C_{rss}			51		
Switching Characteristics						
Total Gate Charge	Q_g	V_{DS} = -30V, V_{GS} = -10V, I_D = -3A		29		nC
Gate-source Charge	Q_{gs}			5.5		
Gate-drain Charge	Q_{gd}			10		
Turn-on Delay Time	$t_{d(on)}$	V_{DD} = -30V, I_D = -1A, V_{GS} = -10V, R_G = 6Ω, R_L = 15Ω		14		ns
Turn-on Rise Time	t_r			17		
Turn-off Delay Time	$t_{d(off)}$			52		
Turn-off Fall Time	t_f			28		
Diode Characteristics						
Diode Forward Voltage[3]	V_{SD}	V_{GS} = 0V, I_S = -3A			-1.2	V

Notes :

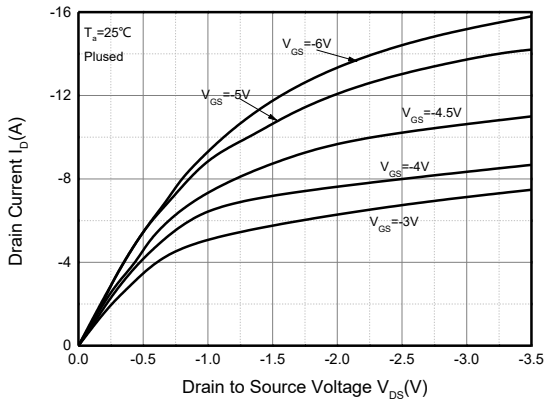
1.$R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR4 board with 1oz. single side copper, in a still air environment with T_A = 25°C.

2.$R_{\theta JA}$ is measured in the steady state

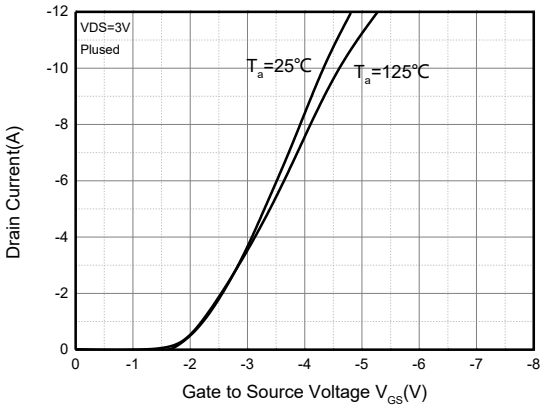
3.Pulse test : Pulse width ≤ 380μs, duty cycle ≤ 2%.

Typical Electrical and Thermal Characteristics

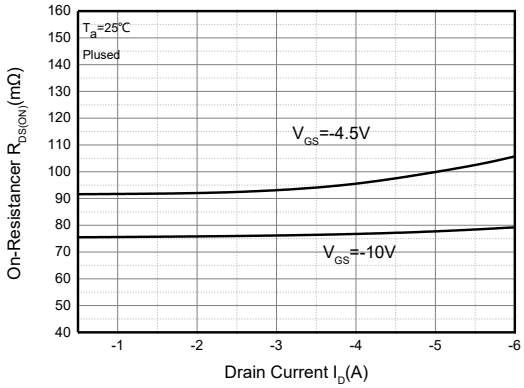
Output Characteristics



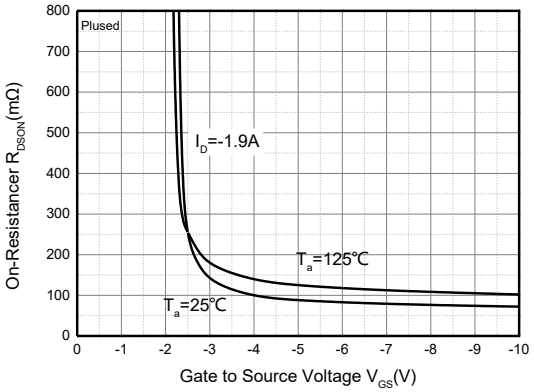
Transfer Characteristics



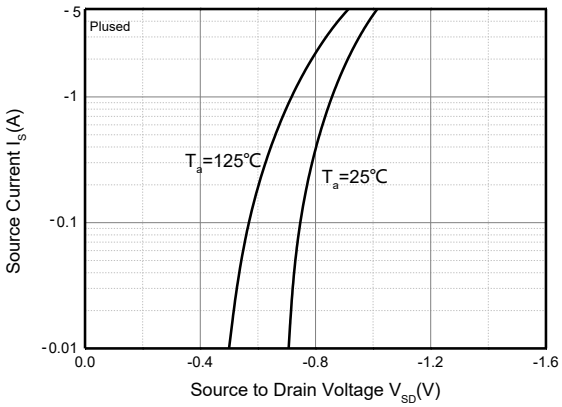
RDS(ON)——ID



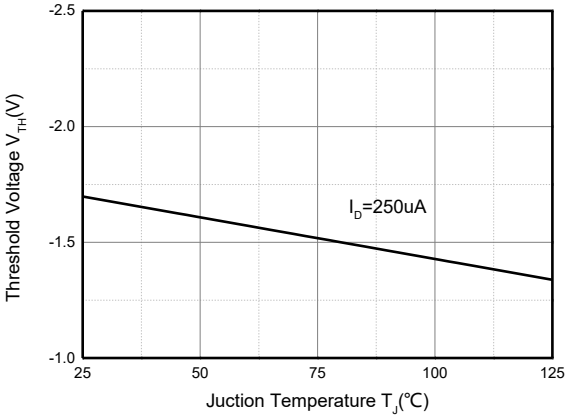
RDS(ON)——VGS



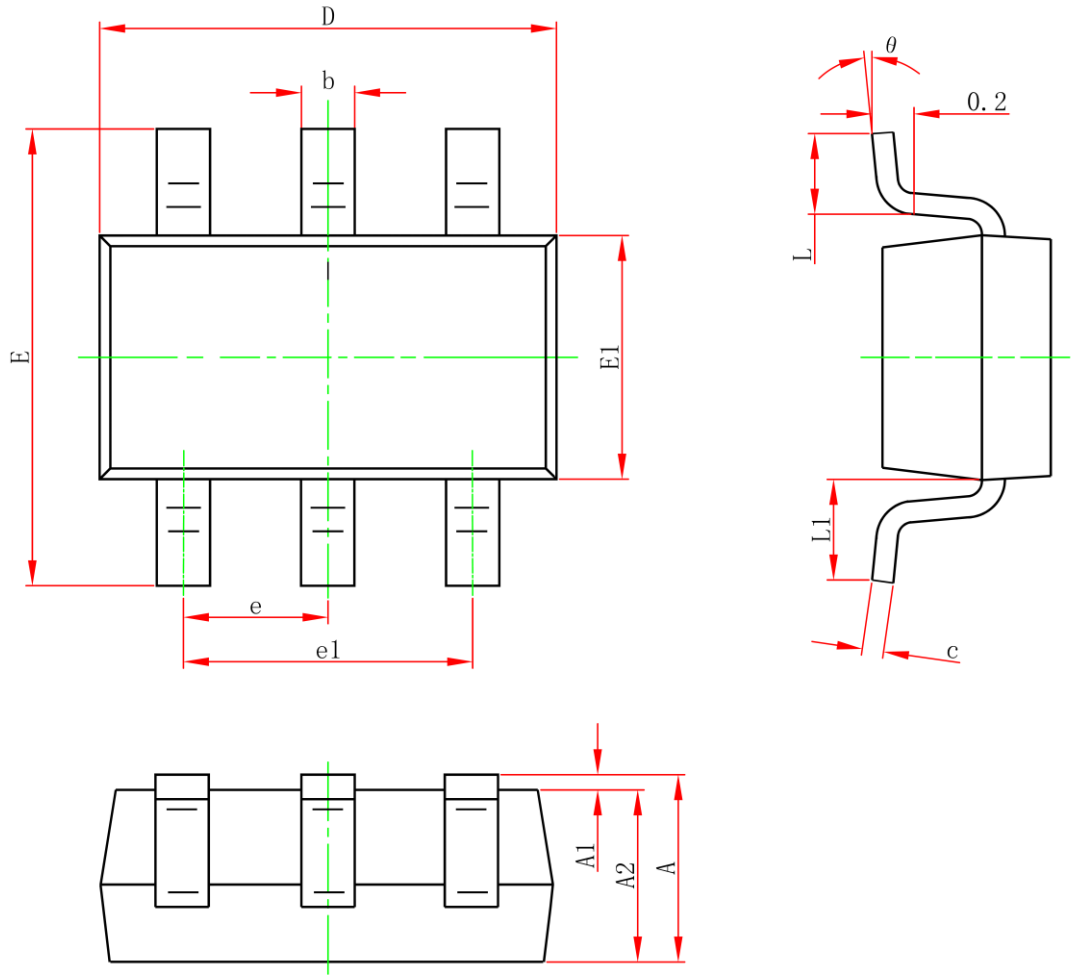
IS——VSD



Threshold Voltage



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	0.150	0.000	0.006
A2	1.050	1.250	0.041	0.049
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
E	2.650	2.950	0.104	0.116
E1	1.500	1.700	0.059	0.067
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
L1	0.600REF		0.024REF	
θ	0°	8°	0°	8°