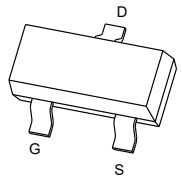
GPK06N06

60V N-Channel MOSFET

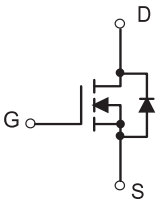
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	29mΩ@10V	6A
	35mΩ@4.5V	

SOT-23-3L



Schematic diagram



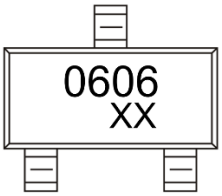
Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance

Application

- Load Switch
- DC/DC Converter

MARKING:



0606 = 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	T_A = 25℃	I_D	6	A
Pulsed Drain Current[1]		I_{DM}	24	A
Power Dissipation[3]	T_A = 25℃	P_D	1.4	W
Thermal Resistance from Junction to Ambient[4]		$R_{\theta JA}$	89	℃/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[2]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	1	1.6	2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 4A		29	40	mΩ
		V_{GS} = 4.5V, I_D = 2A		35	48	
Forward Transconductance	g_{FS}	V_{DS} = 5V, I_D = 5A		11		S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} = 30V, V_{GS} = 0V, f = 1MHz		974		pF
Output Capacitance	C_{oss}			62		
Reverse Transfer Capacitance	C_{rss}			53		
Gate Resistance	R_g	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz		1.8		Ω
Switching Characteristics						
Total Gate Charge	Q_g	V_{DS} = 30V, V_{GS} = 10V, I_D = 5A		15		nC
Gate-Source Charge	Q_{gs}			2.5		
Gate-Drain Charge	Q_{gd}			5.2		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 30V, V_{GS} = 10V, R_L = 6Ω R_G = 2Ω		5.6		ns
Turn-On Rise Time	t_r			4.8		
Turn-Off Delay Time	$t_{d(off)}$			26		
Turn-Off Fall Time	t_f			3.5		
Source - Drain Diode Characteristics						
Diode Forward Voltage[2]	V_{SD}	V_{GS} = 0V, I_S = 0.3A			1.2	V

Notes :

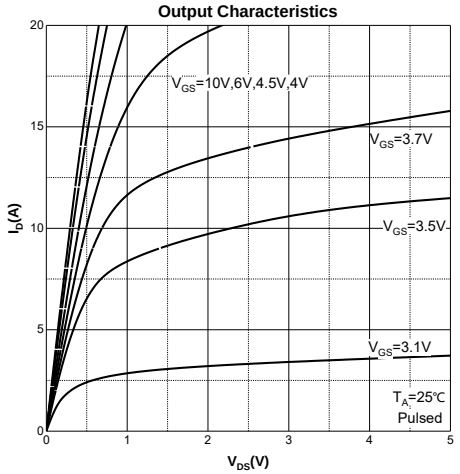
1.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.

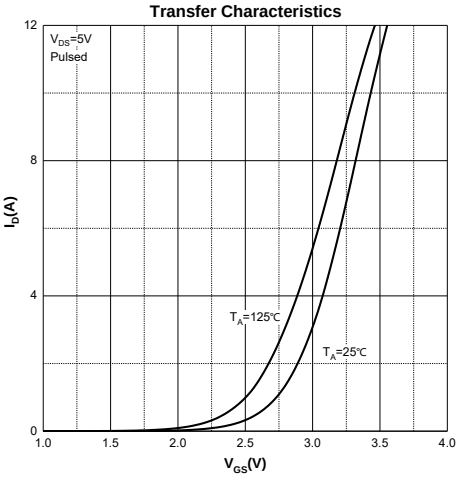
2.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.

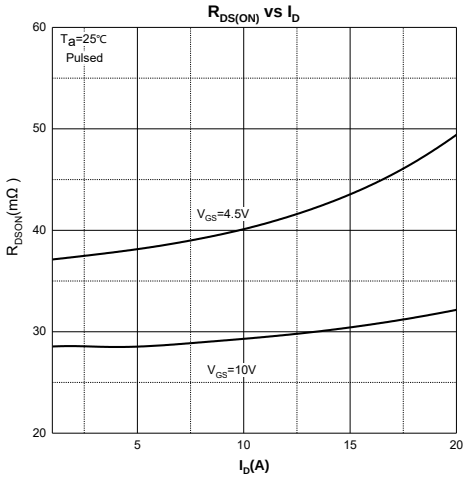
3.The power dissipation P_D is limited by $T_{J(MAX)}$ = 150°C.

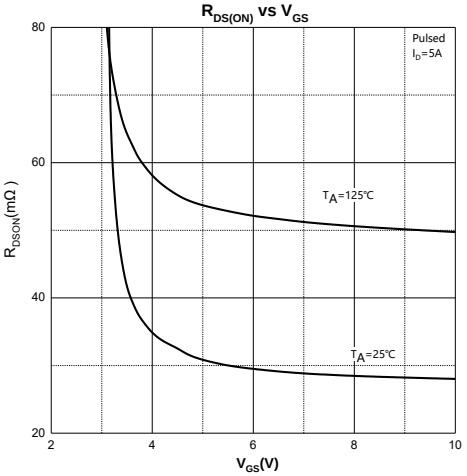
4.Device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

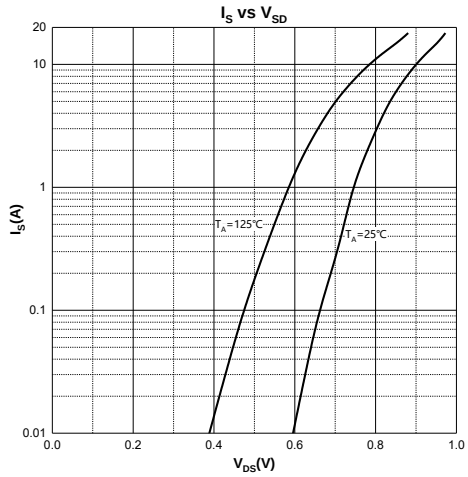
Typical Characteristics

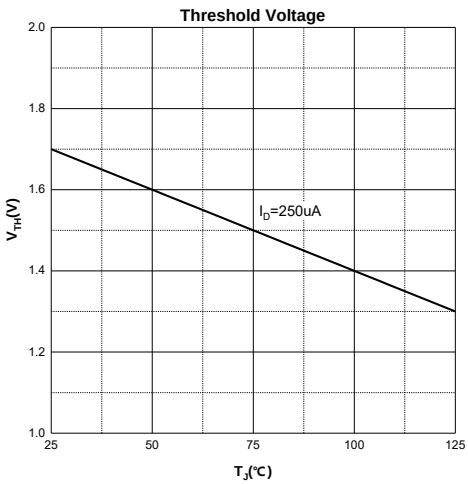




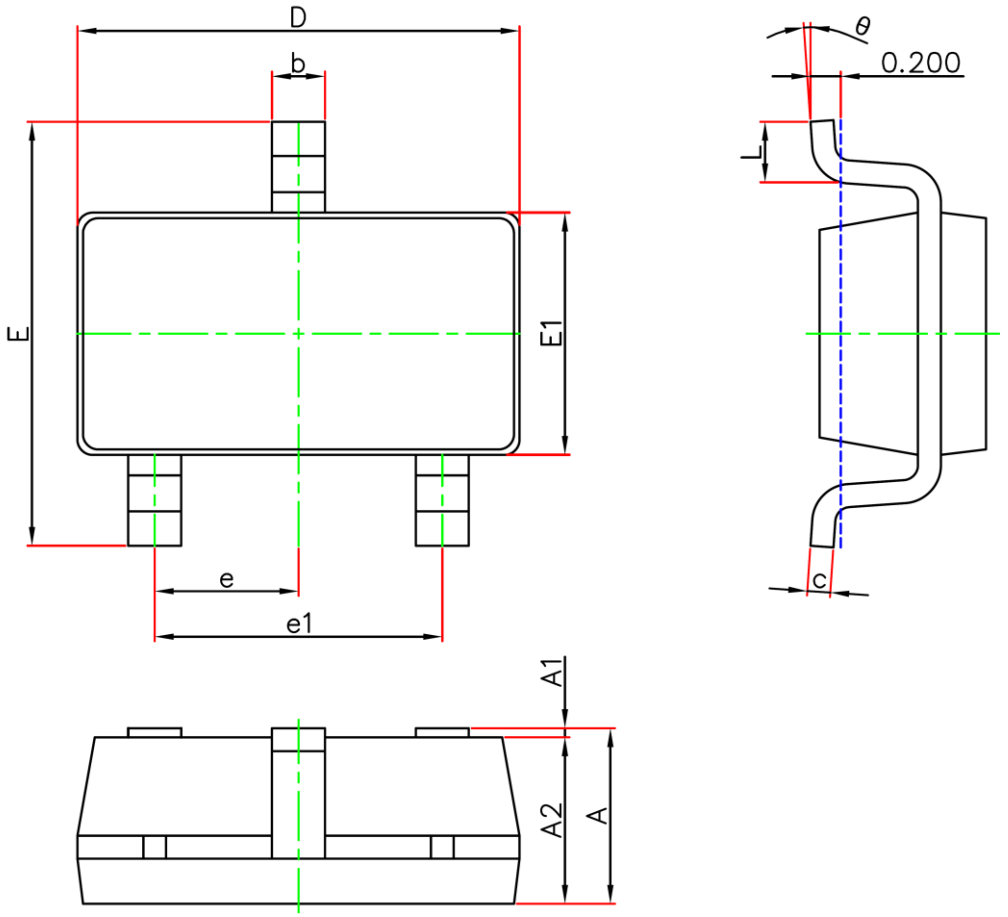








SOT-23-3L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.450	0.035	0.057
A1	0	0.150	0	0.006
A2	0.900	1.300	0.035	0.051
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	2.600	3.000	0.102	0.118
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
θ	0°	8°	0°	8°

Attention：

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