

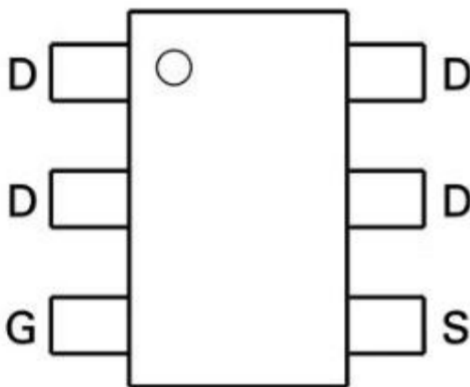
Product Summary

- V_{DS} -40 V
- I_{DS} (at $V_{GS}=-10V$) -4A
- $R_{DS(ON)}$ (at $V_{GS}=-10V$) <85m Ω
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) <112m Ω

Application

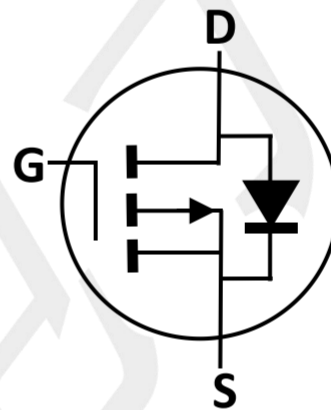
- Reverse Battery protection
- Load switch
- Power management
- Motor Control

Package and Pin Configuration



SOT23-6

Circuit diagram



Equivalent Circuit

Marking:GHTPM

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

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DS}	-40	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	$T_C=25^{\circ}C$	-4
		$T_C=125^{\circ}C$	-2.8
Pulsed Drain Current	I_{DM}	-18	A
Total Power Dissipation	P_{TOT}	1.6	W
Operating Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}C$

Thermal Characteristic

PARAMETER	Symbol	Value	Unit
Junction-to-Ambient Thermal Resistance	R_{thJA}	110	$^{\circ}C/W$

Note : When mounted on 1" square PCB (FR4 material).

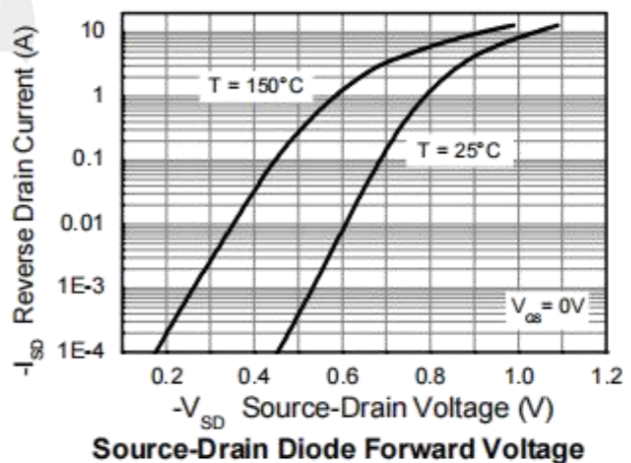
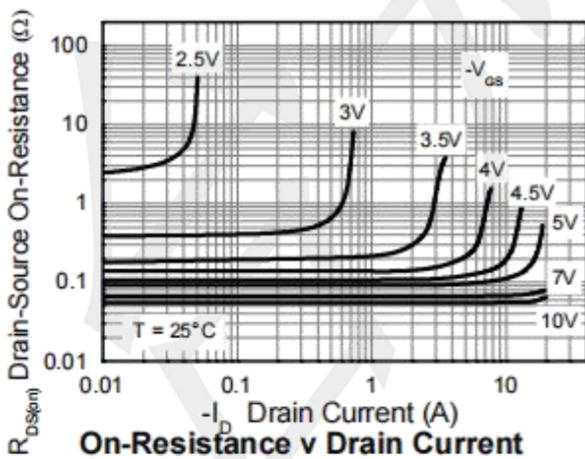
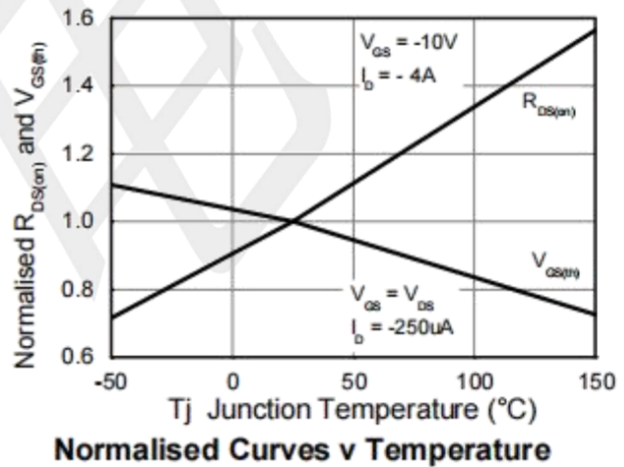
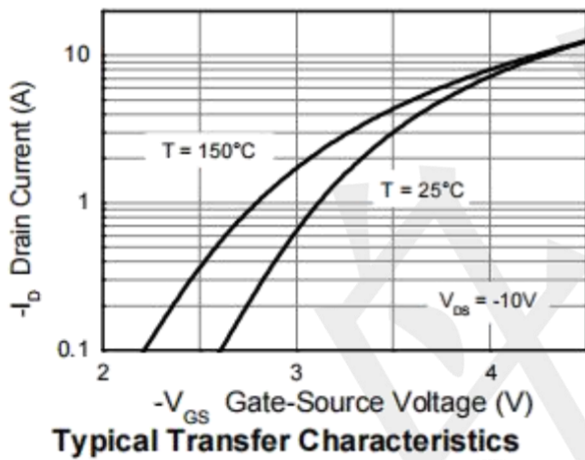
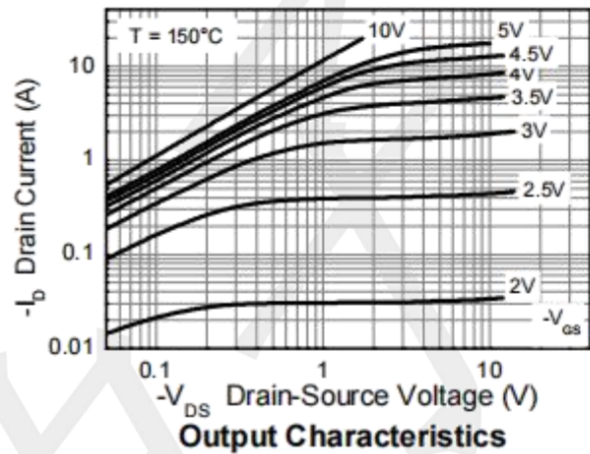
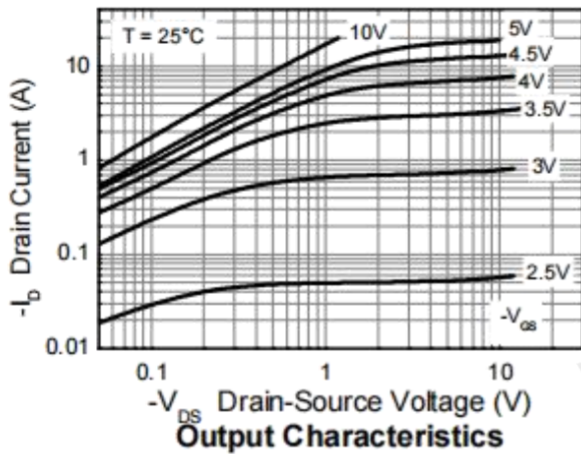
Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	BV _{DSS}	-40	--	--	V
Gate-Source Threshold Voltage	V _{DS} =V _{GS} , I _D = -250μA	V _{GS(th)}	-1.0	-1.5	-3.0	V
Gate-Source Leakage	V _{DS} =0V, V _{GS} = ±20V	I _{GSS}	--	--	±100	nA
Zero Gate Voltage Drain Current	V _{DS} = -40V, V _{GS} =0V	I _{DSS}	--	--	-1	μA
	V _{DS} = -40V, T _J =125°C		--	--	-50	μA
Drain-Source On-State Resistance (Note 1)	V _{GS} = -10V, I _D = -5A	R _{DS(on)}	--	68	85	mΩ
	V _{GS} = -10V, T _J = 125°C		--	148	--	
	V _{GS} = -4.5V, I _D = -4A		--	85	112	
Forward Transconductance (Note 2)	V _{DS} = -20V, I _D = -4A	g _{fs}	--	7.6	--	S
Dynamic (Note 2)						
Total Gate Charge (Note 3)	V _{DS} = -20V, I _D = -4A, V _{GS} = -4.5V	Q _g	--	7.1	--	nC
Gate-Source Charge (Note 3)		Q _{gs}	--	3.6	--	
Gate-Drain Charge (Note 3)		Q _{gd}	--	2.7	--	
Input Capacitance	V _{DS} = -20V, V _{GS} = 0V, F = 1.0MHz	C _{iss}	--	833	--	pF
Output Capacitance		C _{oss}	--	122	--	
Reverse Transfer Capacitance		C _{rss}	--	78	--	
Switching						
Turn-On Delay Time (Note 3)	V _{DD} = -20V, I _D = -1A, V _{GS} = -10V, R _{GEN} = 1Ω	t _{d(on)}	--	2.5	--	nS
Rise Time (Note 3)		t _r	--	3.3	--	
Turn-Off Delay Time (Note 3)		t _{d(off)}	--	47	--	
Fall Time (Note 3)		t _f	--	21	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	V _{GS} = 0V, I _F = -2A	V _{SD}	--	-0.8	-1.2	V
Continuous Source Current	Integral reverse diode in the MOSFET	I _S	--	--	-4	A
Pulsed Current (Note 1)		I _{SM}	--	--	-18	A

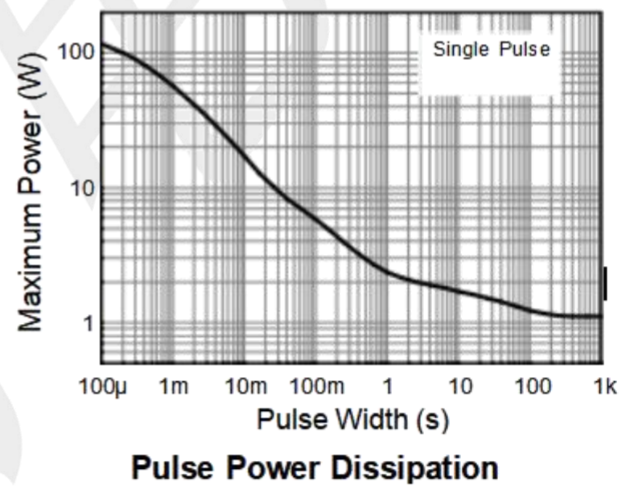
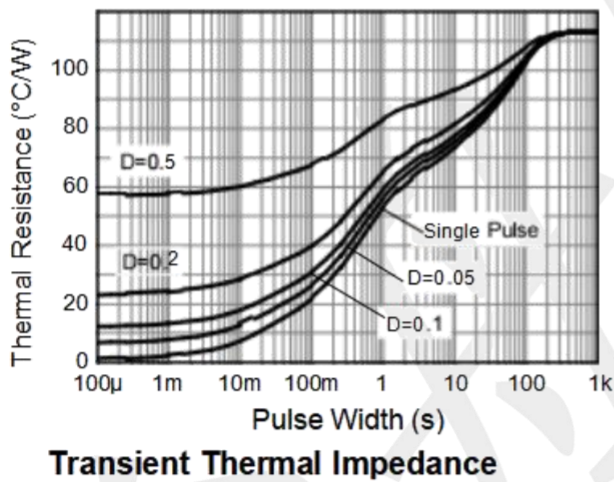
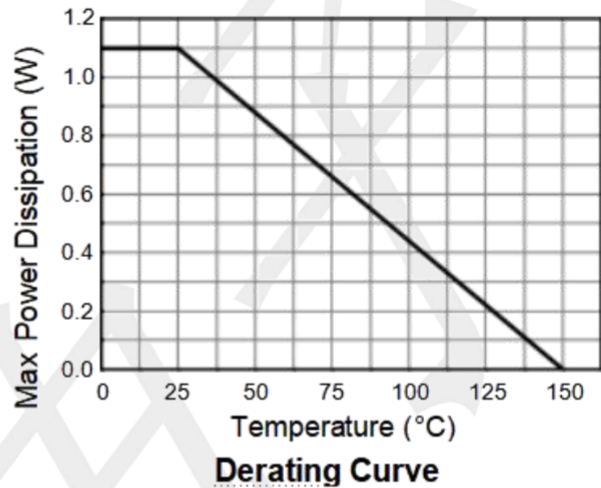
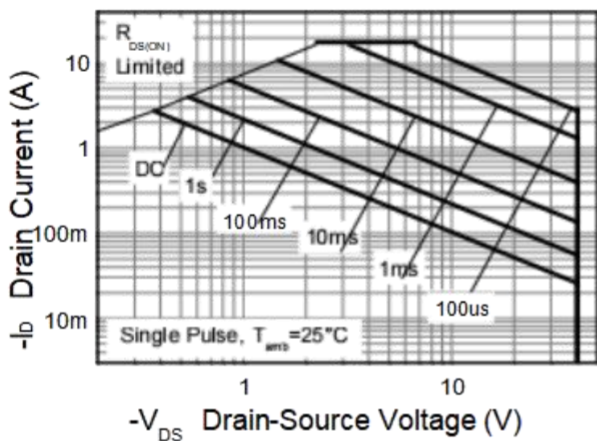
Notes:

1. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.
3. Independent of operating temperature

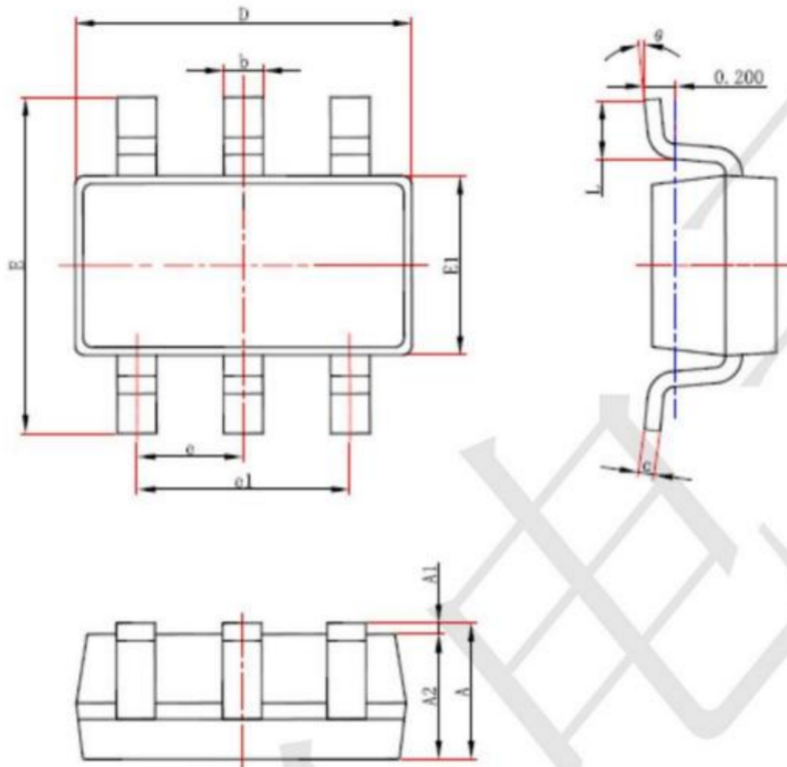
TYPICAL CHARACTERISTICS



Thermal Characteristics



SOT23-6 Package Outline Dimensions



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°

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