GOSTONE

RoHS COMPLIANT

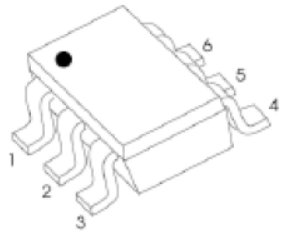
N-Channel 60V, 2Ω max, MOSFET

GMT202N06H7

Product Summary

V_{DS} (V)	$R_{DS(on),max}$ (Ω)	I_D (A)
60	2.0@ V_{GS} = 10V	0.26

SOT-363-6L

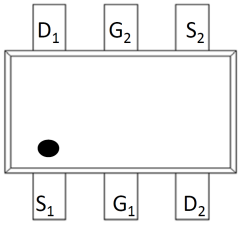


Features

- High Density Cell Design for Low RDS(ON)
- Voltage Controlled Small Signal Switch
- Rugged and Reliable
- High Saturation Current Capability
- ESD Protected

Application

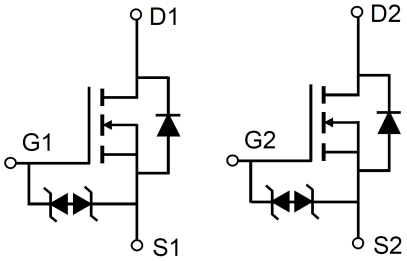
- Load Switch for Portable Devices
- Power Management Functions



PIN Configuration
(Top View)

SOT-363-6L

Equivalent circuit



Absolute Maximum Rating (Ta=25°C)

Parameter		Symbol	Limit	Unit
Drain-source voltage		V_{DS}	60	V
Gate-source voltage		V_{GS}	±20	
Continuous drain current (V_{GS}=10V)(1)	T_A=25℃	I_D	0.26	A
	T_A=70℃		0.21	
Pulsed drain current(2)		$I_{D,pulse}$	1.0	
Power dissipation	T_A=25℃	P_D	0.30	W
	T_A=70℃		0.19	W
Operating junction and storage temperature range		T_J, T_{stg}	-55 to 150	℃

Thermal Characteristic (Ta=25°C)

Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance, Junction-to-Ambient (3)	$R_{\theta JA}$	320	420	℃/W

Electrical characteristics (Ta=25°C ± 3°C)

Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Static parameter(4)						
Drain to source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = 250 μA	60			V
Gate-source threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250 μA	1.0	1.5	2.6	V
Gate-body leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±20 V			±10	μA
Zero gate voltage drain current	I_{DSS}	V_{DS} = 60 V, V_{GS} = 0 V			1	μA
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 300m A		1.5	2.0	Ω
		V_{GS} = 4.5V, I_D = 200m A		1.7	2.4	
Forward transconductance(5)	g_{fs}	V_{DS} = 5.0V, I_D = 200mA		500		mS
Dynamic(5)						
Total gate charge	Q_g	V_{DS} = 30V, I_D = 200mA V_{GS} = 10V		0.8		nC
Gate-source charge	Q_{gs}			0.11		
Gate-drain charge	Q_{gd}			0.18		
Turn-on delay time	$t_{d(on)}$	V_{GS} = 10V, V_{DS} = 30V I_D = 200mA, R_{GEN} = 3.0Ω		2.7		ns
Rise time	t_r			2.3		
Turn-off delay time	$t_{d(off)}$			12		
Fall time	t_f			5.2		
Input capacitance	C_{iss}	V_{DS} = 30V, V_{GS} = 0 V, f = 1 MHz		18		pF
Output capacitance	C_{oss}			7.5		
Reverse transfer capacitance	C_{rss}			3.5		
Reverse Diode Characteristics(5)						
Diode forward voltage	V_{SD}	I_S = 150mA, V_{GS} = 0V		0.85	1.2	V
Diode Forward Current	I_s	T_A = 25°C			0.26	A

Notes

1. This current is chip limited, whiich is calculated based on Rthjc.
2. This current is calculated on single pulse with 10μs Pulse & Duty Cycle = 1%.
3. Device mounted on FR-4 substrate PC board with 2oz copper in 1inch square cooling area.
4. Short duration pulse test used to minimize self-heating effect.
5. Defined by design, not subject to production.

Electrical characteristics diagrams

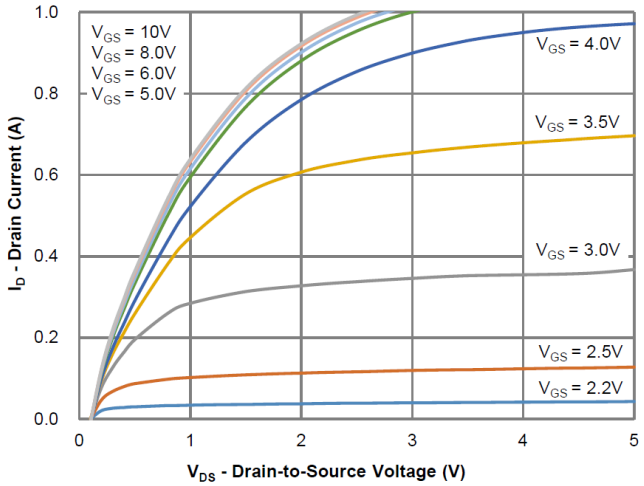


Figure 1: Output Characteristics

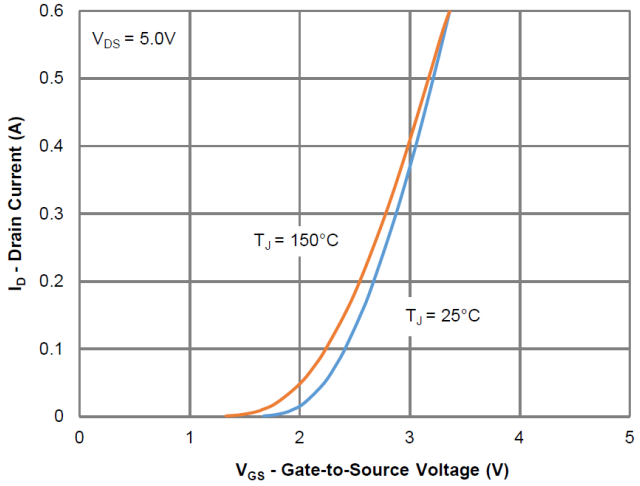


Figure 2: Transfer Characteristics

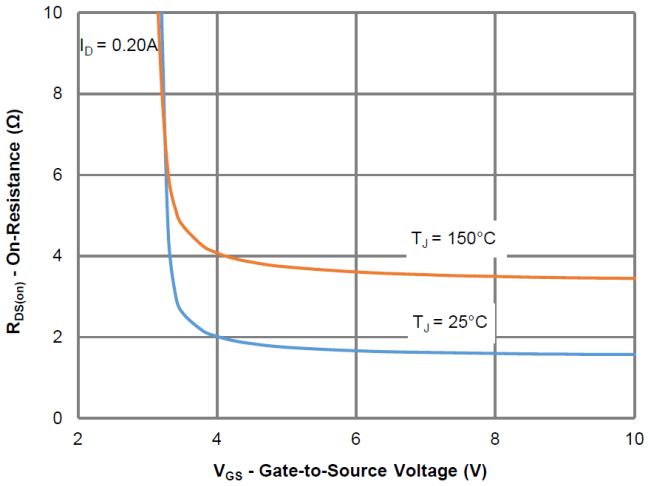


Figure 3: On-Resistance vs. Gate-Source Voltage

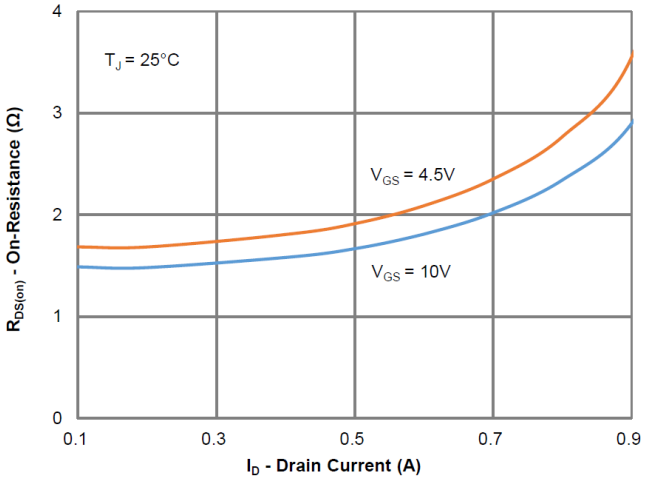


Figure 4: On-Resistance vs. Drain Current and Gate Voltage

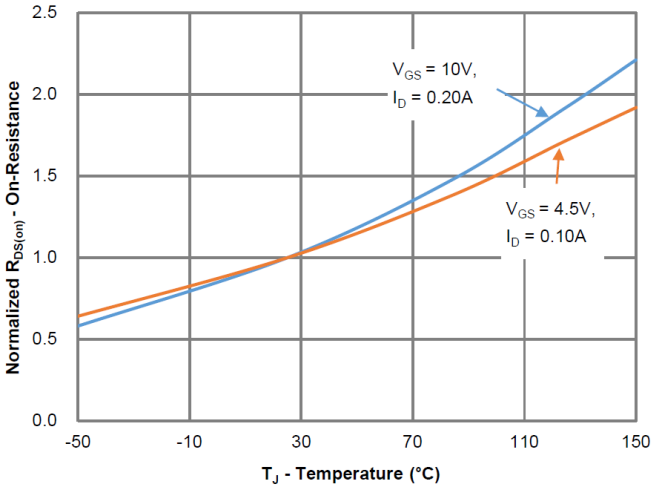


Figure 5: On-Resistance vs. Junction Temperature

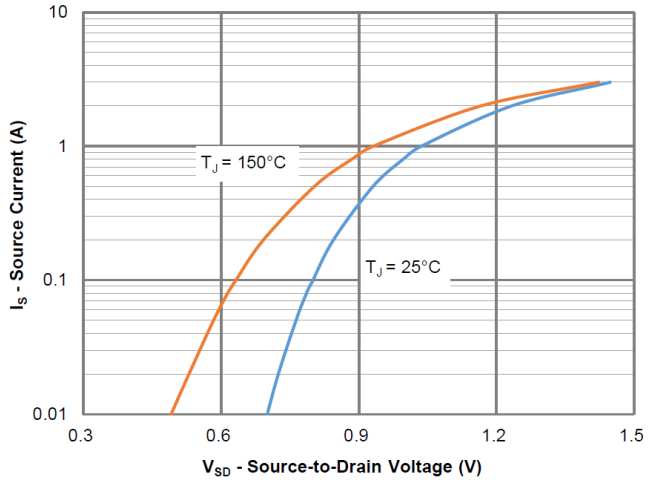


Figure 6: Source-Drain Diode Forward Voltage

Electrical characteristics diagrams

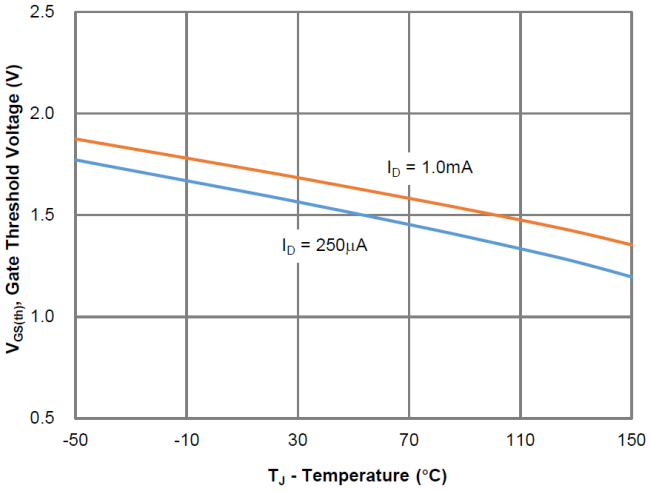


Figure 7: Gate Threshold Variation vs. Junction Temperature

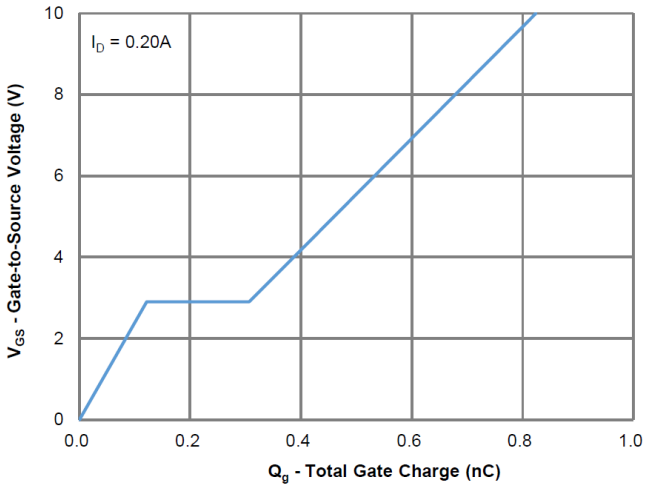


Figure 8: Gate Charge Characteristics

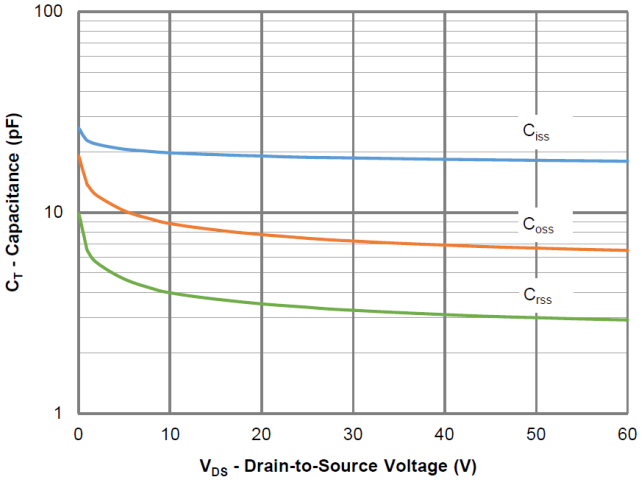


Figure 9: Capacitance Characteristics

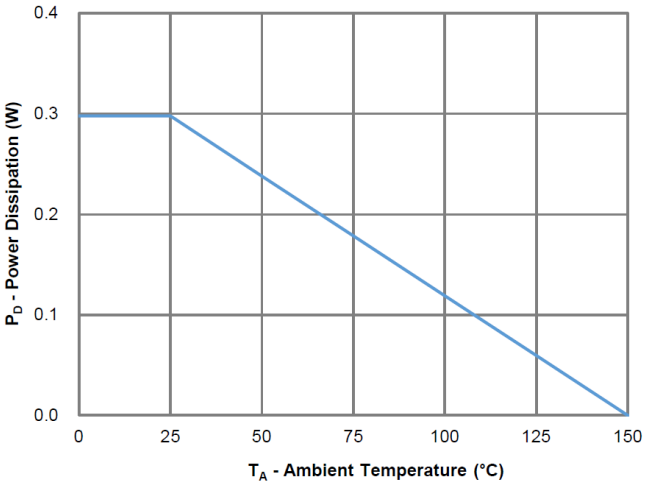


Figure 10: Power Derating

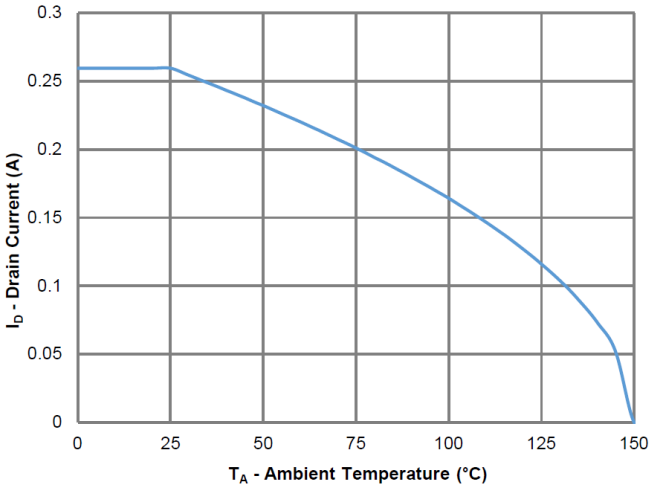


Figure 11: Current Derating

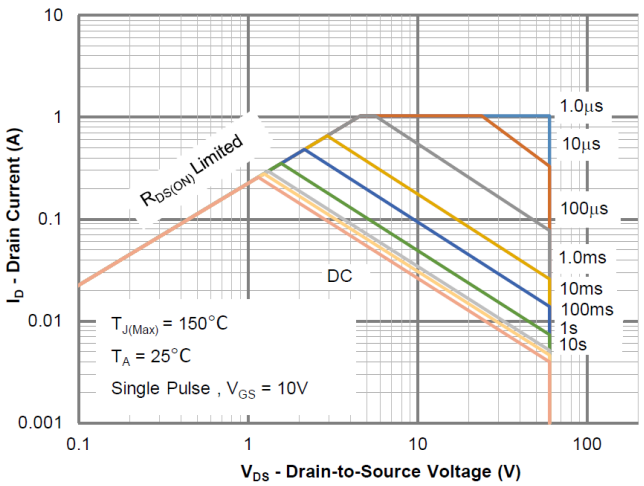


Figure 12: Safe Operating Area

Electrical characteristics diagrams

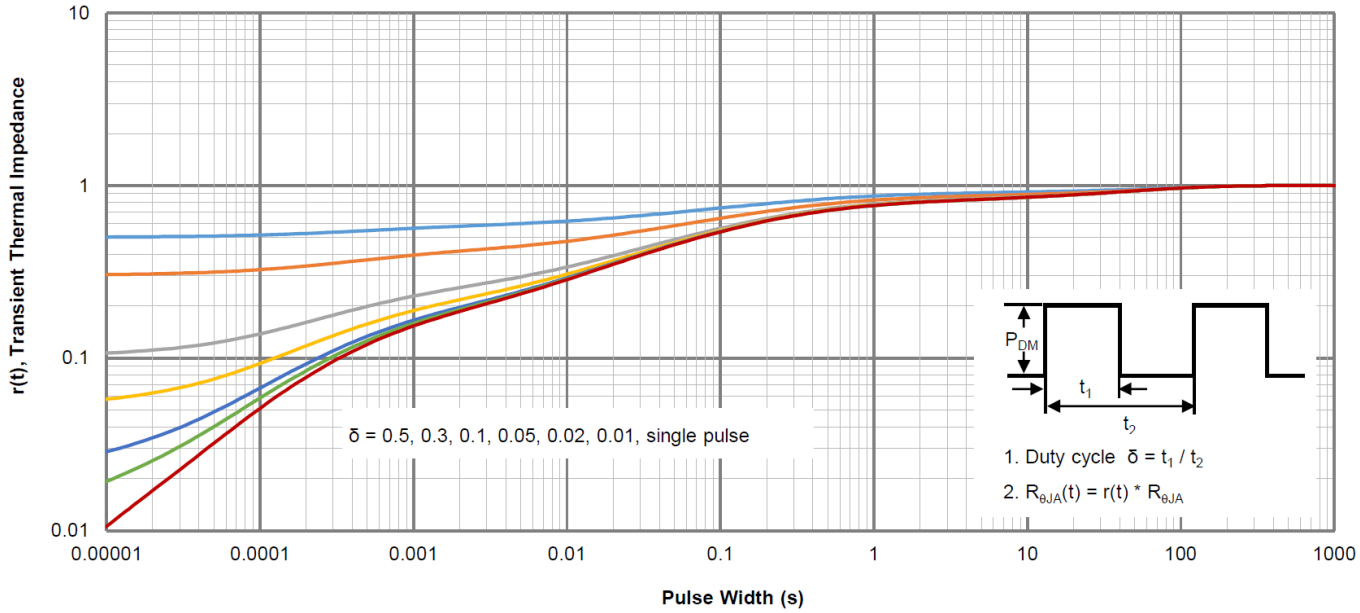
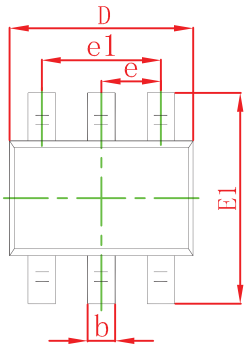
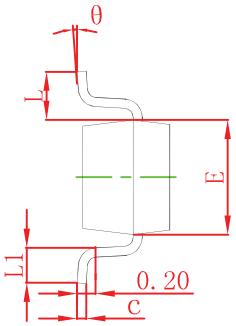
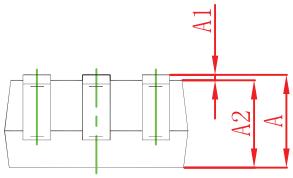


Figure 13: Normalized Maximum Transient Thermal Impedance

Package outline dimensions SOT-363-6L







Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
K	0°	8°	0°	8°

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