GOSTONE

RoHS COMPLIANT

N-Channel 60V, 3.5Ω max, MOSFET

GMT352N06H6

Product Summary

V_{DS} (V)	$R_{DS(on),max}$ (Ω)	I_D (A)
60	3.5@ V_{GS} = 10V	0.3

General Information

❖ **Handling**

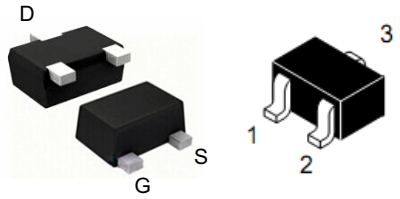
Product must be handled only at ESD safe workstations. Standard ESD precautions and safe work environments are as defined in MIL-HDBK-263.

Features

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

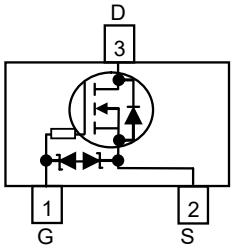
Application

- ❖ Load Switch for Portable Devices
- ❖ Power Management Functions



SOT-323

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	0.3	A
	T_A=70℃		0.24	
Pulsed drain current(2)		$I_{D,pulse}$	1.0	
Power dissipation	T_A=25℃	P_D	0.29	W
	T_A=70℃		0.18	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)	$R_{\theta JA}$	375	430	℃/W

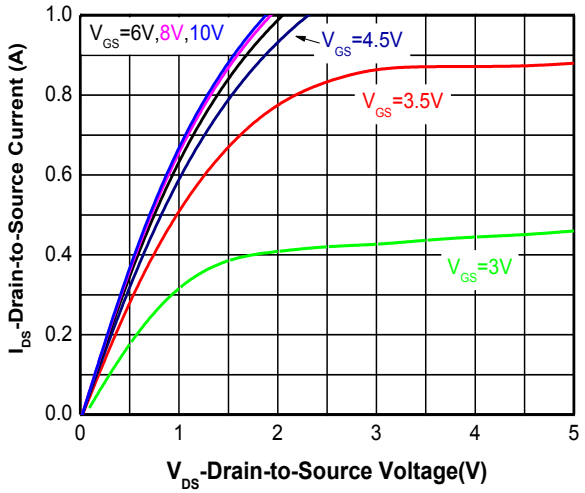
Electrical characteristics (Ta=25°C ± 3°C)

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	2.7	V
Gate-body leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±20 V			±100	nA
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		1.2	3.5	Ω
		V_{GS} = 4.5V, I_D = 200m A		1.3	4.5	
Forward transconductance(5)	g_{fs}	V_{DS} = 15V, I_D = 200mA		430		mS
Dynamic(5)						
Total gate charge	Q_g	V_{DS} = 30V, I_D = 300mA V_{GS} = 10V		1.2		nC
Gate-source charge	Q_{gs}			0.21		
Gate-drain charge	Q_{gd}			0.12		
Turn-on delay time	$t_{d(on)}$	V_{GS} = 10V, V_{DS} = 30V I_D = 300mA, R_{GEN} = 6.0Ω		5.0		ns
Rise time	t_r			4.9		
Turn-off delay time	$t_{d(off)}$			17		
Fall time	t_f			10.2		
Input capacitance	C_{iss}	V_{DS} = 30V, V_{GS} = 0 V, f = 1 MHz		16		pF
Output capacitance	C_{oss}			10		
Reverse transfer capacitance	C_{rss}			5.5		
Reverse Diode Characteristics(5)						
Diode forward voltage	V_{SD}	I_S = 300mA, V_{GS} = 0V		0.82	1.2	V
Diode Forward Current	I_s	T_A = 25°C			0.3	A

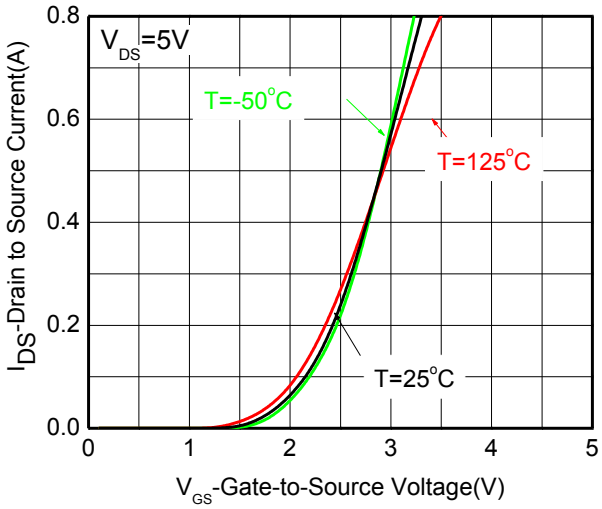
Notes

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.

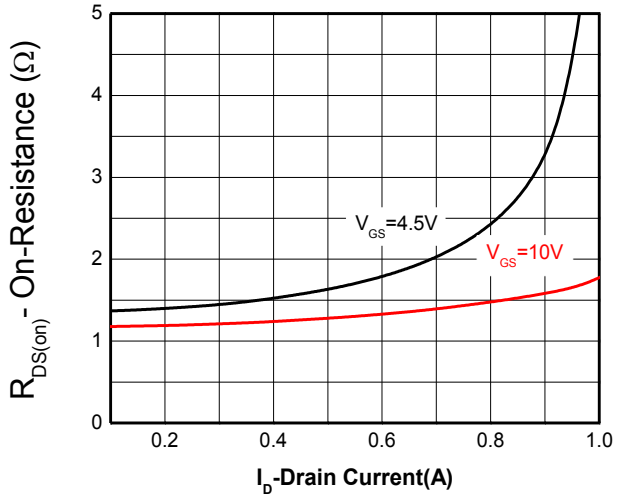
Electrical characteristics diagrams



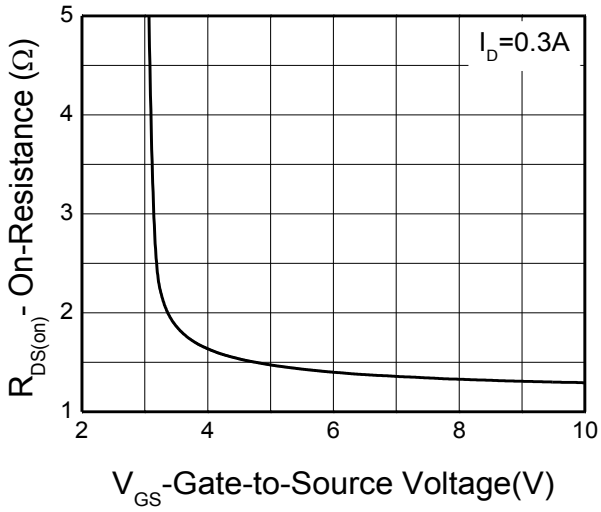
Output characteristics



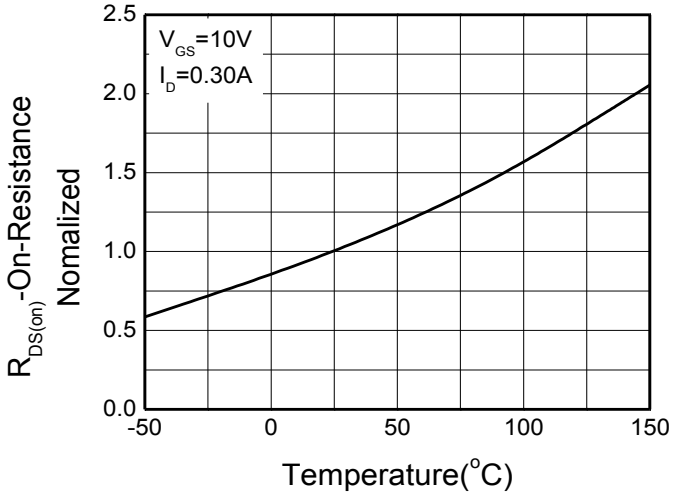
Transfer characteristics



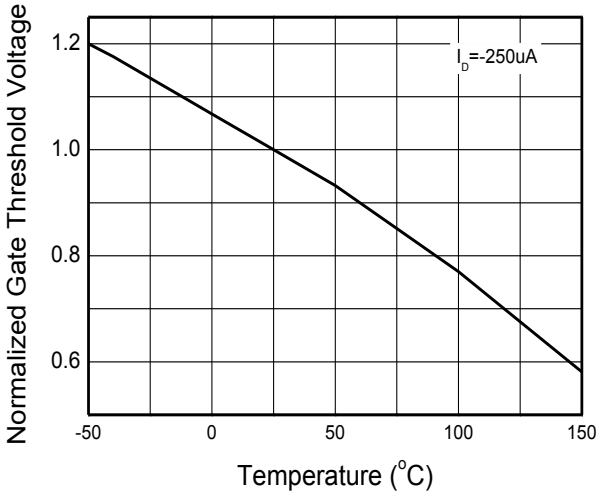
On-Resistance vs. Drain current



On-Resistance vs. Gate-to-Source voltage

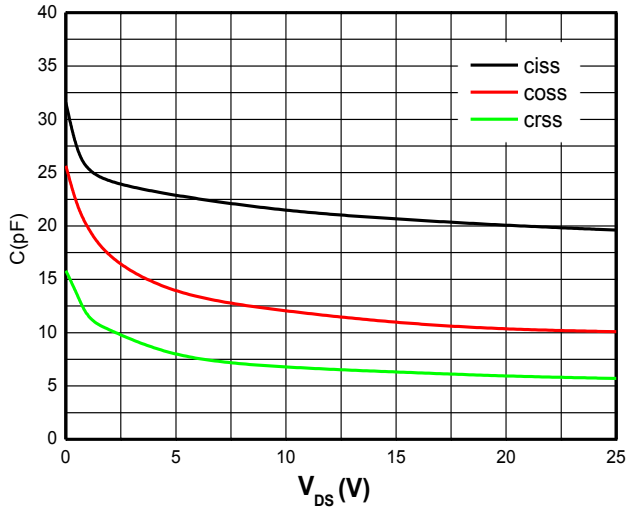


On-Resistance vs. Junction temperature

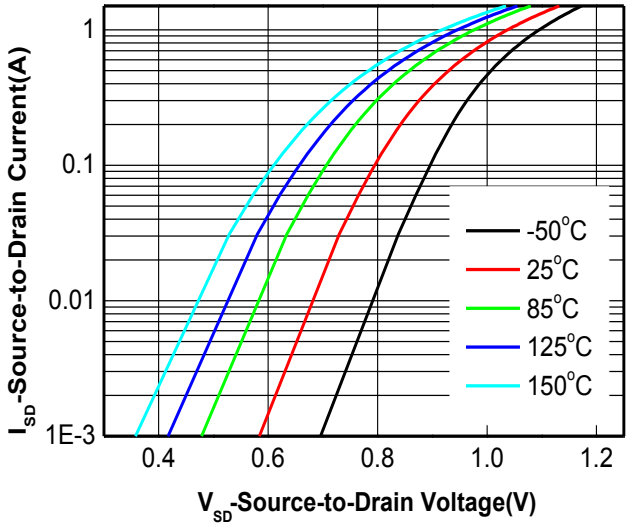


Threshold voltage vs. Temperature

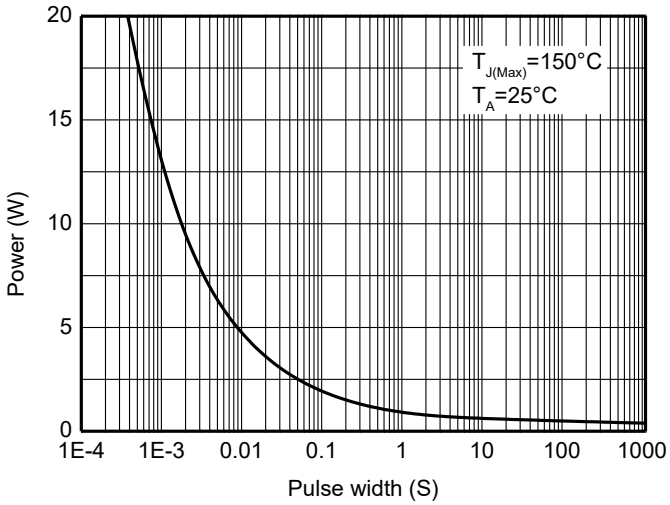
Electrical characteristics diagrams



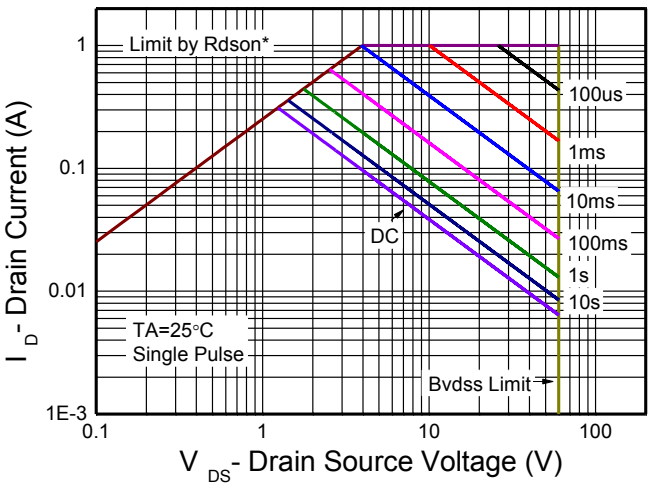
Capacitance



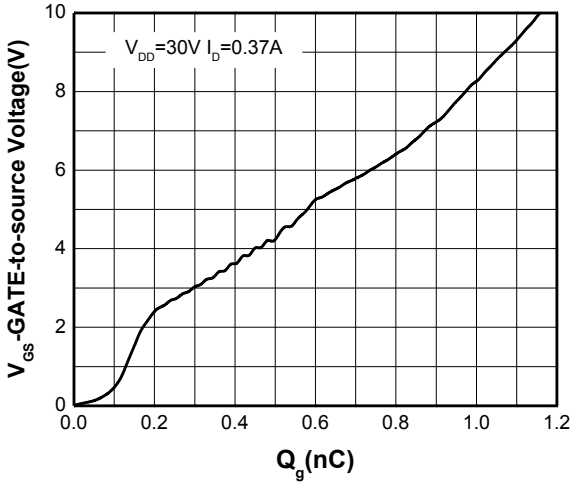
Body diode forward voltage



Single pulse power

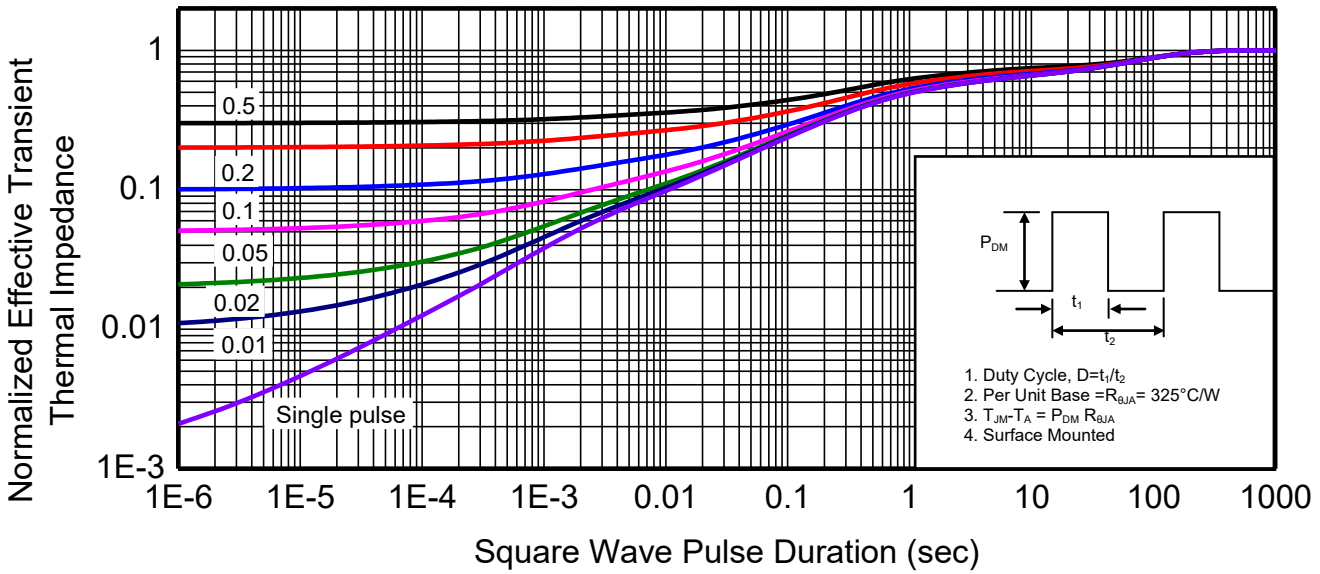


Safe operating power



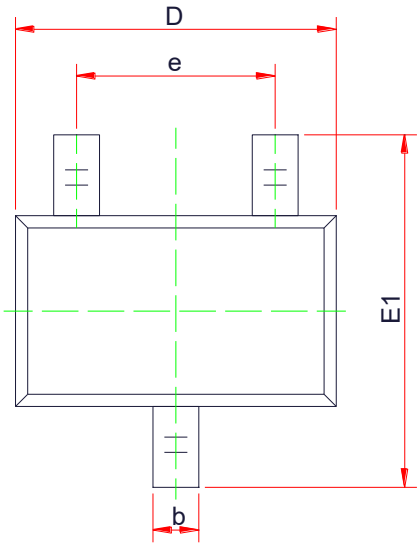
Gate Charge Characteristics

Electrical characteristics diagrams

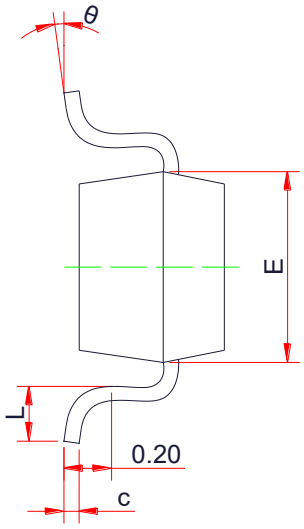


Transient thermal response (Junction-to-Ambient)

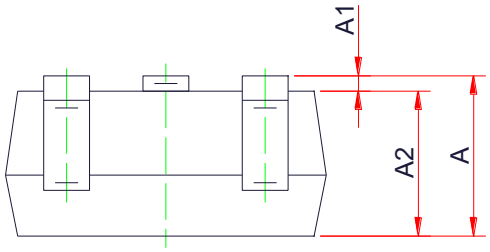
Package outline dimensions SOT-323



TOP VIEW



SIDE VIEW



SIDE VIEW

Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.80	0.95	1.10
A1	0.00	-	0.10
A2	0.80	0.90	1.00
b	0.20	0.30	0.40
c	0.05	0.10	0.15
D	1.90	2.05	2.20
E	1.15	1.25	1.25
E1	2.00	2.20	2.45
e	1.20	1.30	1.40
L	0.20	-	-
θ	6° Ref		

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