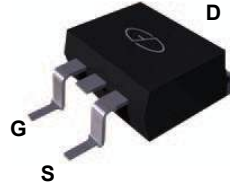
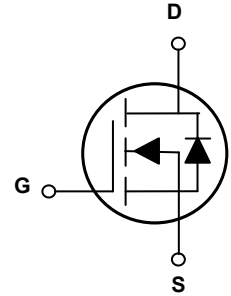


Main Product Characteristics

BV_{DSS}	100V
$R_{DS(ON)}$	18m Ω
I_D	60A



TO-263 (D²PAK)



Schematic Diagram

Features and Benefits

- Advanced MOSFET process technology
- Ideal for high efficiency switch mode power supplies
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery



Description

The GSFT1060 utilizes the latest techniques to achieve high cell density and low on-resistance. These features make this device extremely efficient and reliable for use in high efficiency switch mode power supplies and a wide variety of other applications.

Absolute Maximum Ratings ($T_C=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Max.	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous ($T_C=25^\circ\text{C}$)	I_D	60	A
Drain Current-Continuous ($T_C=100^\circ\text{C}$)		38	A
Drain Current-Pulsed ¹	I_{DM}	180	A
Single Pulse Avalanche Energy ²	E_{AS}	100	mJ
Single Pulse Avalanche Current ²	I_{AS}	45	A
Power Dissipation ($T_C=25^\circ\text{C}$)	P_D	113	W
Power Dissipation-Derate Above 25°C		0.9	W/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	62	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.1	$^\circ\text{C}/\text{W}$
Storage Temperature Range	T_{STG}	-50 To +150	$^\circ\text{C}$
Operating Junction Temperature Range	T_J	-50 To +150	$^\circ\text{C}$

Electrical Characteristics (T_J=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	100	-	-	V
BV _{DSS} Temperature Coefficient	ΔBV _{DSS} /ΔT _J	Reference to 25°C, I _D =1mA	-	0.05	-	V/°C
Drain-Source Leakage Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V, T _J =25°C	-	-	1	μA
		V _{DS} =80V, V _{GS} =0V, T _J =125°C	-	-	10	
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
On Characteristics						
Static Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =25A	-	15	18	mΩ
		V _{GS} =6V, I _D =15A	-	20	28	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2	-	4	V
V _{GS(th)} Temperature Coefficient	ΔV _{GS(th)}		-	-5	-	mV/°C
Forward Transconductance	g _{fs}	V _{DS} =10V, I _D =3A	-	10	-	S
Dynamic and Switching Characteristics						
Total Gate Charge ^{3,4}	Q _g	V _{DS} =50V, I _D =5A, V _{GS} =10V	-	37.6	70	nC
Gate-Source Charge ^{3,4}	Q _{gs}		-	11.7	22	
Gate-Drain Charge ^{3,4}	Q _{gd}		-	9.8	19	
Turn-On Delay Time ^{3,4}	t _{d(on)}	V _{DD} =50V, I _D =1A V _{GS} =10V, R _G =6Ω	-	20	40	nS
Turn-On Rise Time ^{3,4}	t _r		-	15	30	
Turn-Off Delay Time ^{3,4}	t _{d(off)}		-	45	80	
Turn-Off Fall Time ^{3,4}	t _f		-	21	40	
Input Capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, F=1.0MHz	-	1850	3300	pF
Output Capacitance	C _{oss}		-	160	300	
Reverse Transfer Capacitance	C _{rss}		-	85	160	
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, F=1MHz	-	1.35	2.6	Ω
Drain-Source Diode Characteristics and Maximum Ratings						
Continuous Source Current	I _S	V _G =V _D =0V, Force Current	-	-	60	A
Pulsed Source Current	I _{SM}		-	-	120	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =1A, T _J =25°C	-	-	1	V

Note :

1. Repetitive Rating : Pulsed width limited by maximum junction temperature.
2. V_{DD}=50V, V_{GS}=10V, L=0.1mH, I_{AS}=45A., R_G=25Ω, Starting T_J=25°C.
3. Pulse test: pulse width ≤ 300us, duty cycle ≤ 2%.
4. Essentially independent of operating temperature.

Typical Electrical and Thermal Characteristic Curves

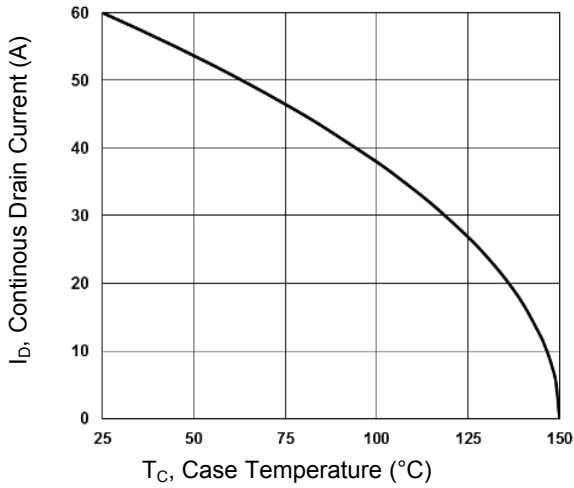


Figure 1. Continuous Drain Current vs. T_c

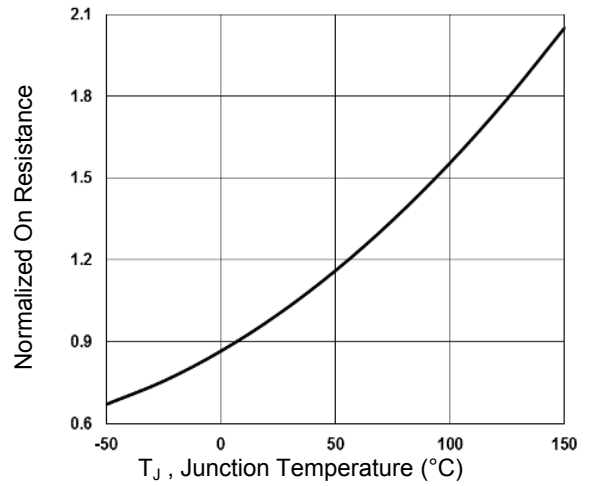


Figure 2. Normalized R_{DSON} vs. T_j

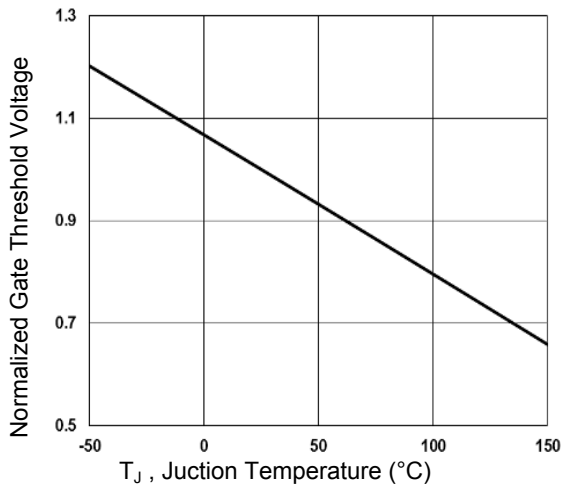


Figure 3. Normalized V_{th} vs. T_j

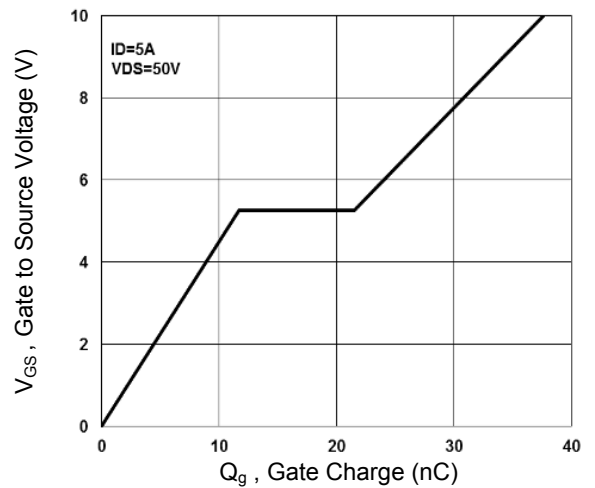


Figure 4. Gate Charge Characteristics

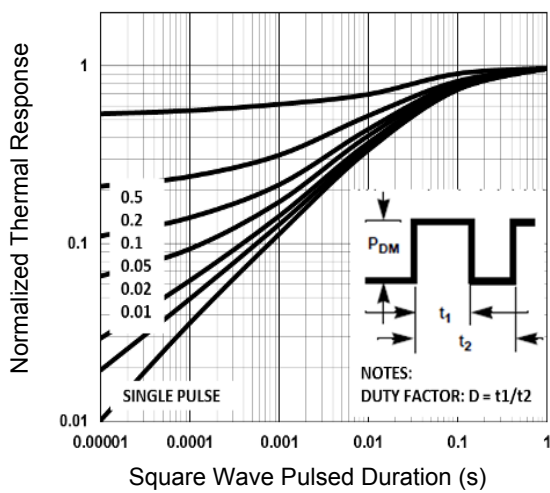


Figure 5. Normalized Transient Impedance

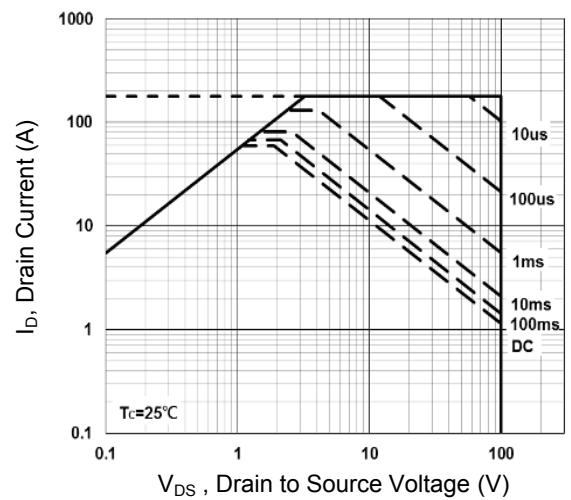


Figure 6. Maximum Safe Operation Area

Typical Electrical and Thermal Characteristic Curves

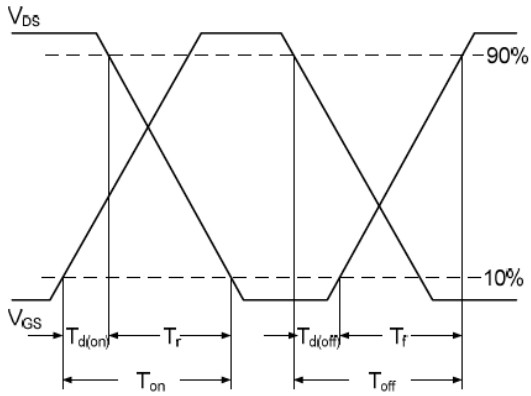


Figure 7. Switching Time Waveform

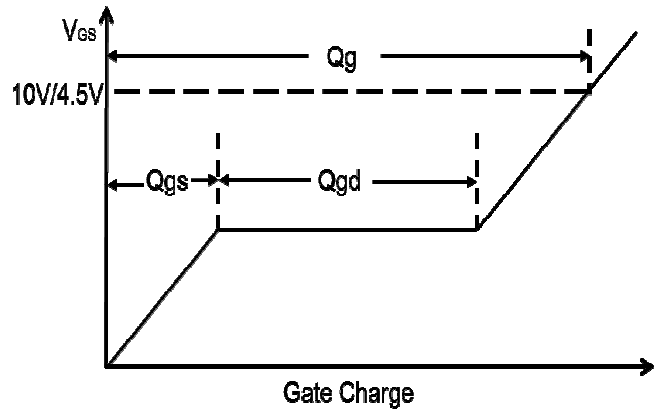
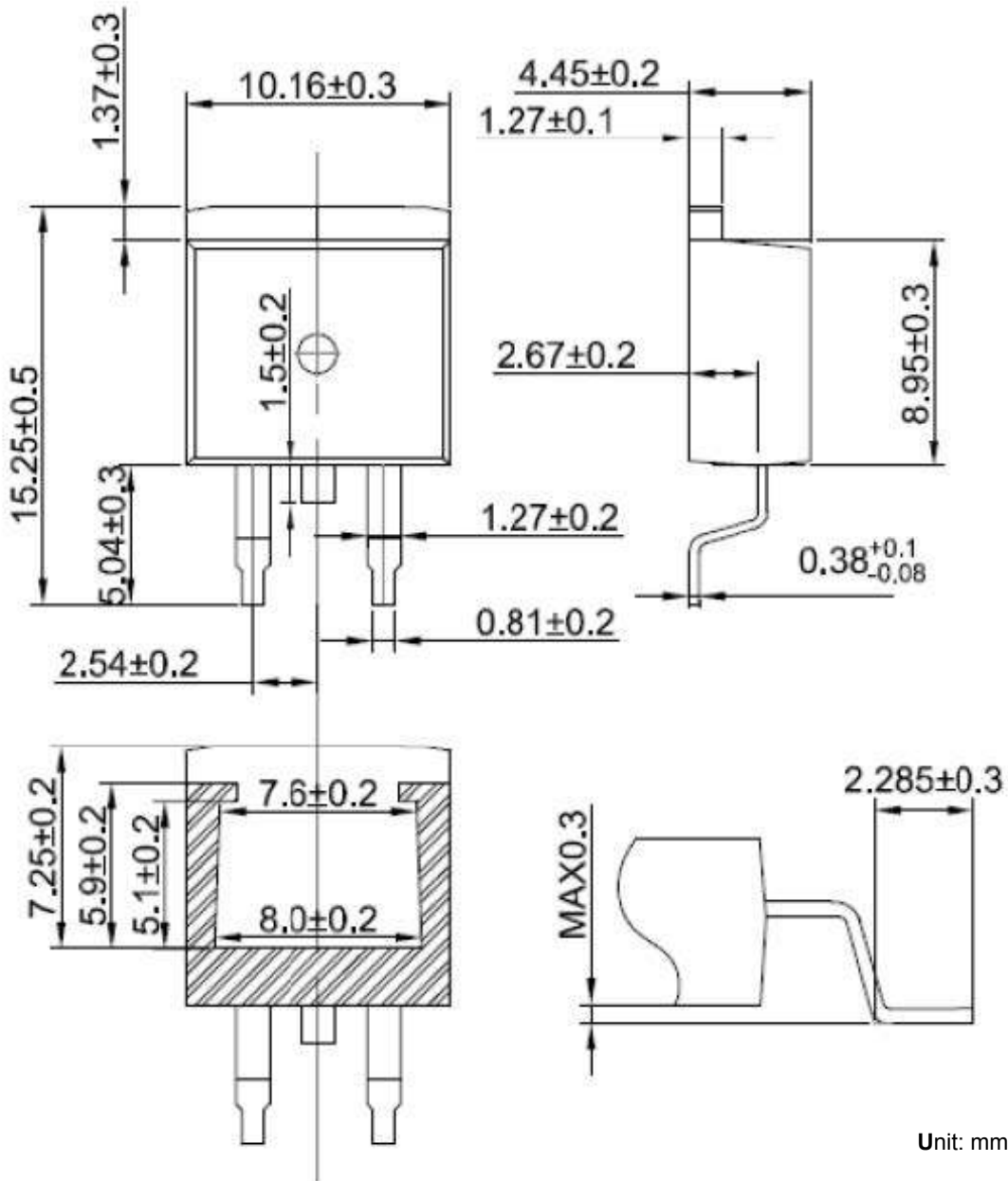


Figure 8. Gate Charge Waveform

Package Outline Dimensions (TO-263/D²PAK)



Order Information

Device	Package	Marking	Carrier	Quantity
GSFT1060	TO-263	DH0966A	Tape & Reel	3,000 pcs / Reel