

P-Channel Fast Switching MOSFET

Features

- Advanced high cell density Trench technology
- 100% EAS Guaranteed
- Super Low Gate Charge
- Halogen-Free & Lead-Free

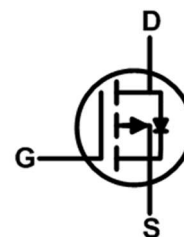
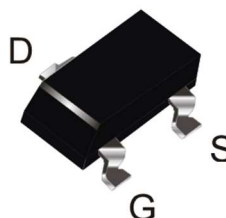
Product Summary

BVDSS	R _{DS(on)}	I _D
-60V	180mΩ	-1.7A

Application

- Load switch
- Power switching

SOT23 Pin Configuration



Absolute Maximum Ratings (at T_A = 25°C 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°C	I _D	-1.7	A
	T _A = 70°C	I _D	-1.4	A
Pulse Drain Current ¹⁾	I _{DM}	-7	A	
Power Dissipation	P _D	1	W	
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to +150	°C	

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient ²⁾	R _{θJA}	125	°C/W

Note:

1) Pulse width ≤300us, duty cycle ≤2%, limited by T_J max.

2) The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.

Characteristics at T_J = 25°C unless otherwise noted

Parameter	Symbol	Min.	Typ.	Max.	Unit
STATIC PARAMETERS					
Drain-Source Breakdown Voltage at V _{GS} =0V, I _D =-250μA	BV _{DSS}	-60			V
Drain-Source Leakage Current at V _{DS} =-48V, V _{GS} =0V	I _{DSS}			-1	μA
Gate Leakage Current at V _{GS} =±20V, V _{DS} =0V	I _{GSS}			±100	nA
Gate-Source Threshold Voltage at V _{DS} =V _{GS} , I _D =-250μA	V _{GS(th)}	-1.0		-2.5	V
Drain-Source On-State Resistance at V _{GS} = -10V, I _D = -1.5A at V _{GS} = -4.5V, I _D = -1A	R _{DS(on)}		150 188	180 266	mΩ
DYNAMIC PARAMETERS					
Input Capacitance at V _{GS} =0V, V _{DS} =-15V, f=1MHz	C _{iss}		531		pF
Output Capacitance at V _{GS} =0V, V _{DS} =-15V, f=1MHz	C _{oss}		59		
Reverse Transfer Capacitance at V _{GS} =0V, V _{DS} =-15V, f=1MHz	C _{rss}		38		
Gate charge total at V _{DS} =-20V, V _{GS} =-4.5V, I _D =-1.5A	Q _g		4.6		nC
Gate to Source Charge at V _{DS} =-20V, V _{GS} =-4.5V, I _D =-1.5A	Q _{gs}		1.4		
Gate to Drain Charge at V _{DS} =-20V, V _{GS} =-4.5V, I _D =-1.5A	Q _{gd}		1.62		
Turn-On Delay Time at V _{DS} =-15V, V _{GS} =-10V, R _{GEN} =3.3Ω, I _D =-1A	t _{d(on)}		17.4		nS
Turn-On Rise Time at V _{DS} =-15V, V _{GS} =-10V, R _{GEN} =3.3Ω, I _D =-1A	t _r		5.4		
Turn-Off Delay Time at V _{DS} =-15V, V _{GS} =-10V, R _{GEN} =3.3Ω, I _D =-1A	t _{d(off)}		37.2		
Turn-Off Fall Time at V _{DS} =-15V, V _{GS} =-10V, R _{GEN} =3.3Ω, I _D =-1A	t _f		2.4		
Body-Diode PARAMETERS					
Drain-Source Diode Forward Voltage at I _S =-1A, V _{GS} =0V	V _{SD}			-1.2	V
Maximum Body-Diode Continuous Current	I _S			-1.7	A

Electrical Characteristics Curves

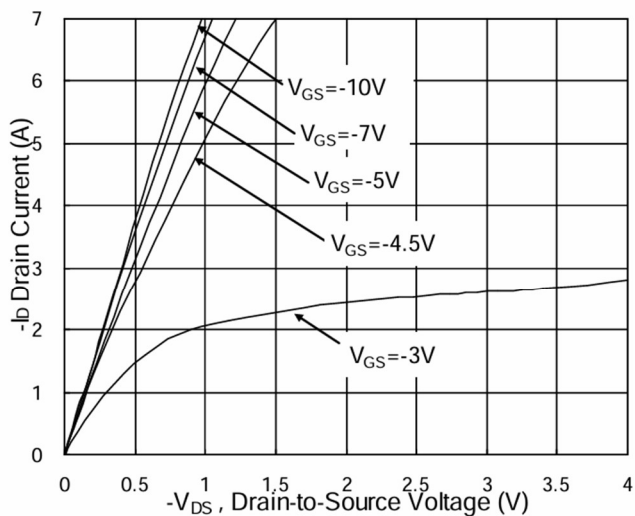


Fig.1 Typical Output Characteristics

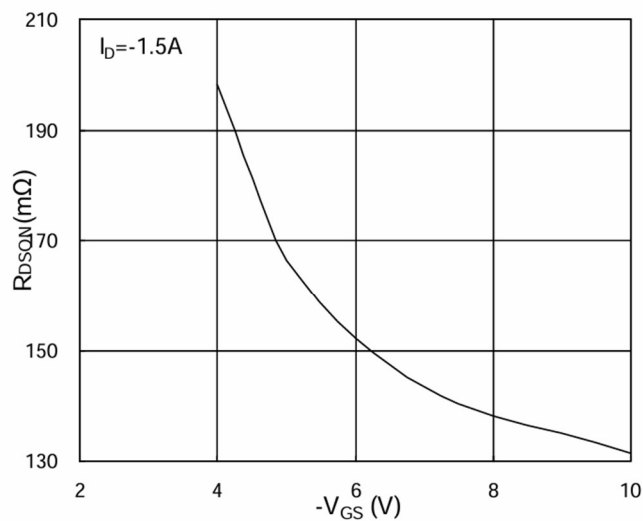


Fig.2 On-Resistance v.s Gate-Source

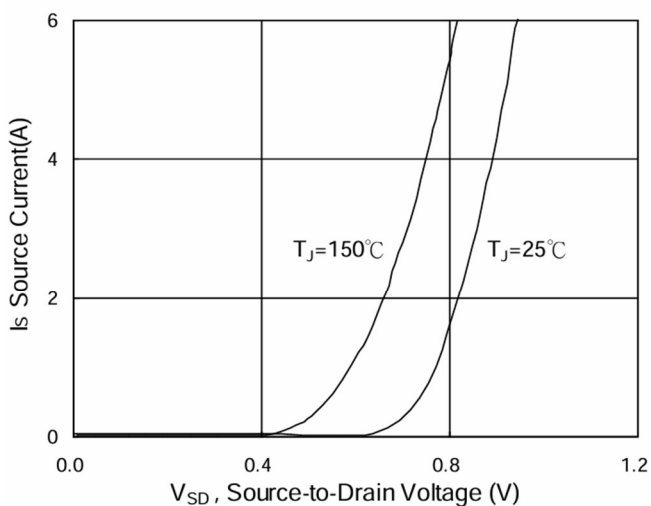


Fig.3 Forward Characteristics Of Reverse

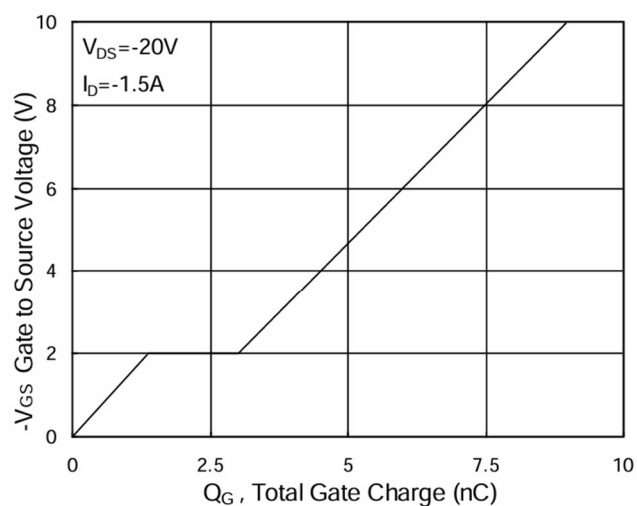


Fig.4 Gate-Charge Characteristics

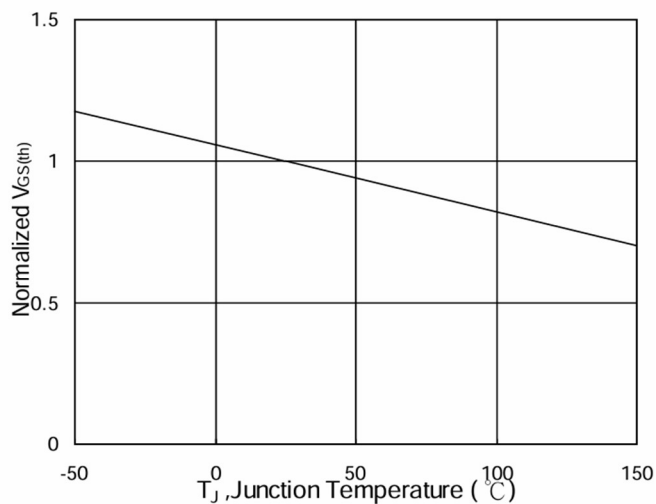


Fig.5 Normalized V_{GS(th)} v.s T_J

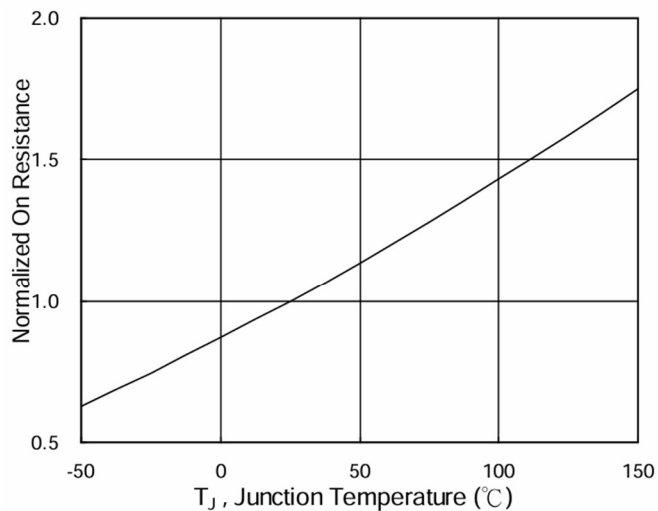


Fig.6 Normalized R_{DSon} v.s T_J

Electrical Characteristics Curves

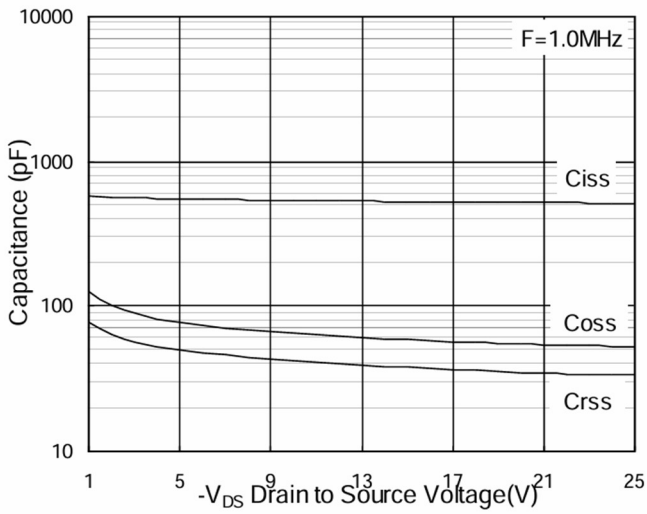


Fig.7 Capacitance

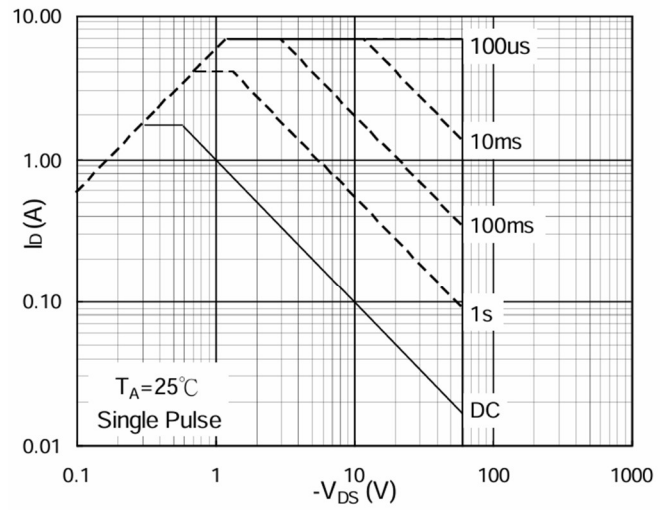


Fig.8 Safe Operating Area

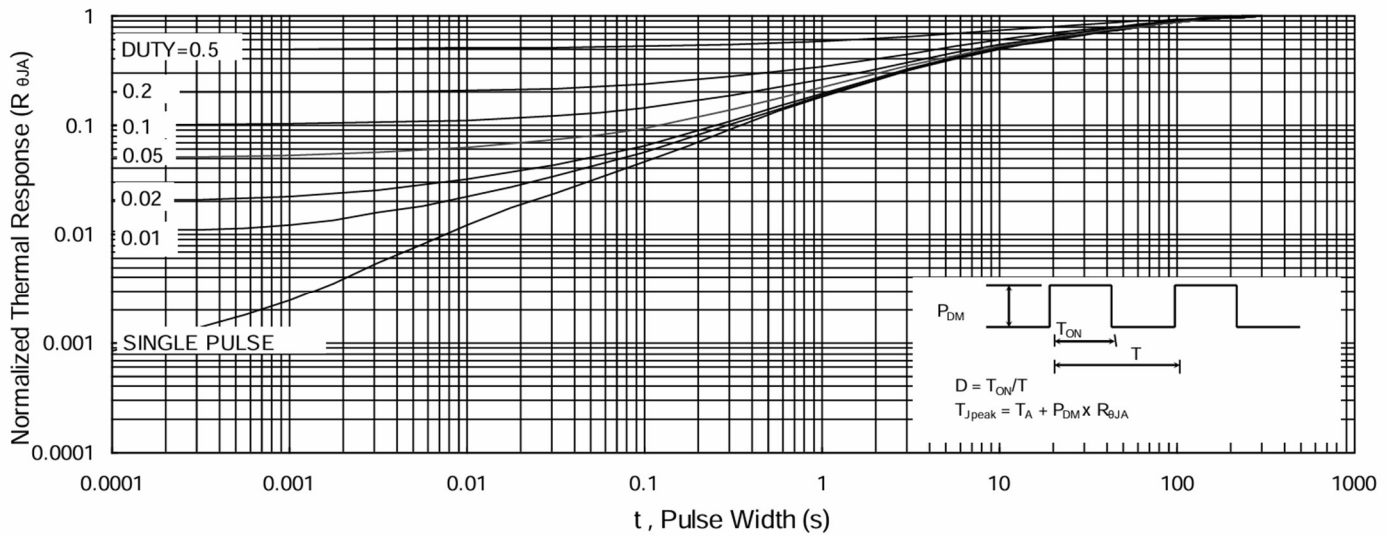


Fig.9 Normalized Maximum Transient Thermal Impedance

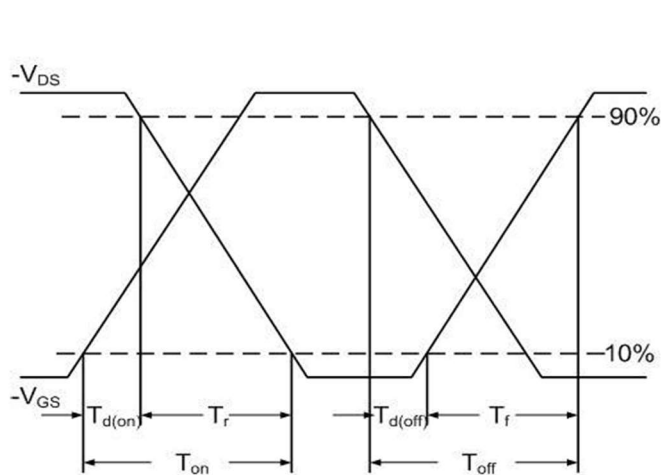


Fig.10 Switching time waveform

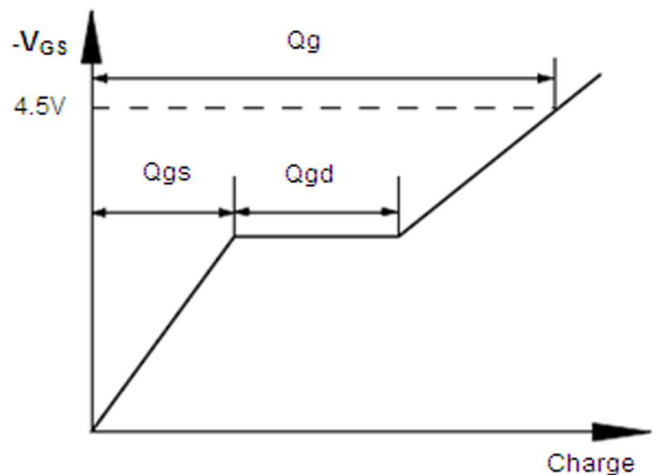
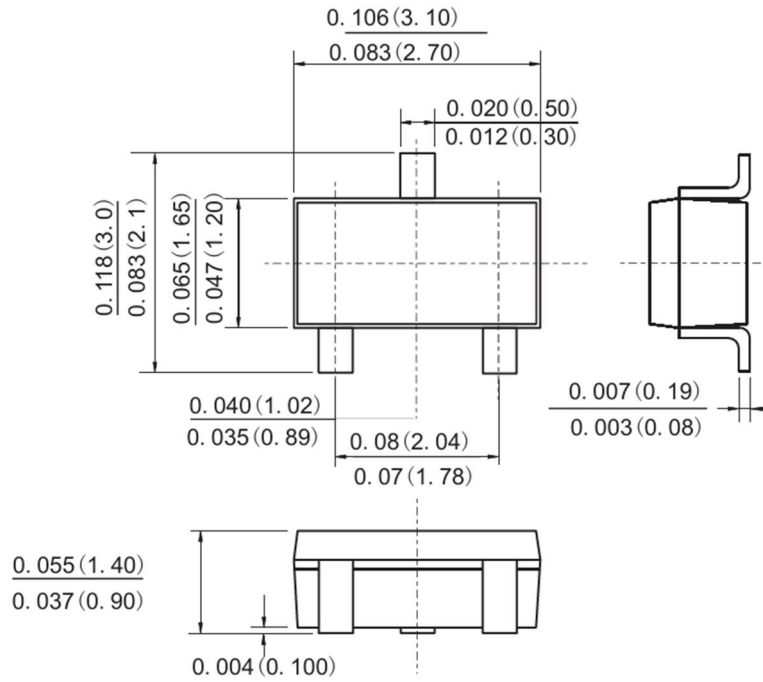


Fig.11 Gate Charge waveform

Order Information

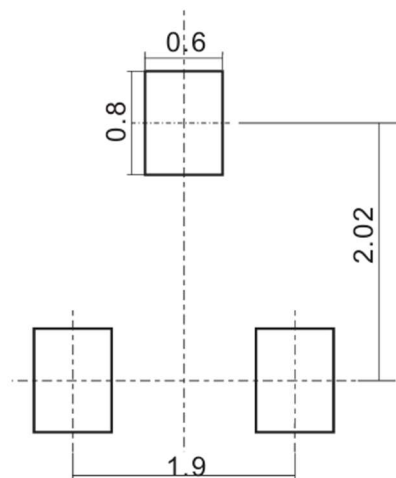
Part Number	Package	Marking	Quantity
Sh6107	SOT-23	A9	3000

Package Outline Dimensions (Units: mm) SOT-23



Dimensions in inches and (millimeters)

Suggested Pad Layout



Dimensions in millimeters