

GSM6184JZF

60V N-Channel MOSFETs

Product Description

These N-Channel enhancement mode power field effect transistors are using trench DMOS technology. This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode.

These devices are well suited for high efficiency fast switching applications.

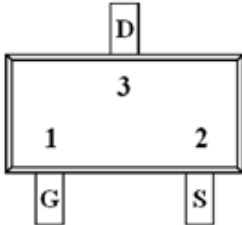
Features

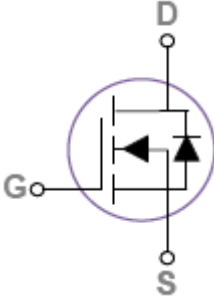
- 60V, 2.8A, $R_{DS(ON)}=92m\Omega@V_{GS}=10V$
- Improved dv/dt capability
- Fast switching
- 100% EAS guaranteed.
- Green Device Available
- SOT-23 package design

Applications

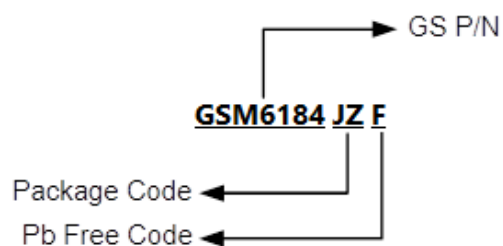
- Motor Drive
- Power Tools
- LED Lighting

Packages & Pin Assignments

GSM6184JZF (SOT-23)	
 Top Views	
Pin	Description
1	Gate
2	Source
3	Drain



Ordering Information



Marking Information



Part Number	Package	Part Marking	Quantity
GSM6184JZF	SOT-23	S3XWM	3000pcs

Absolute Maximum Ratings

T_A=25°C Unless otherwise noted

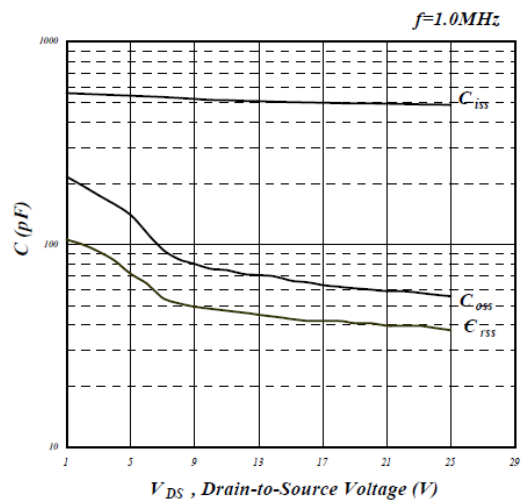
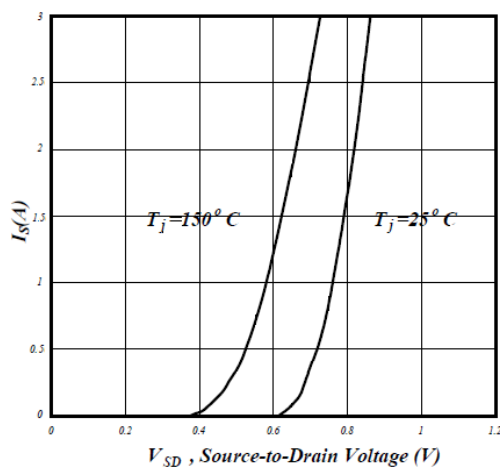
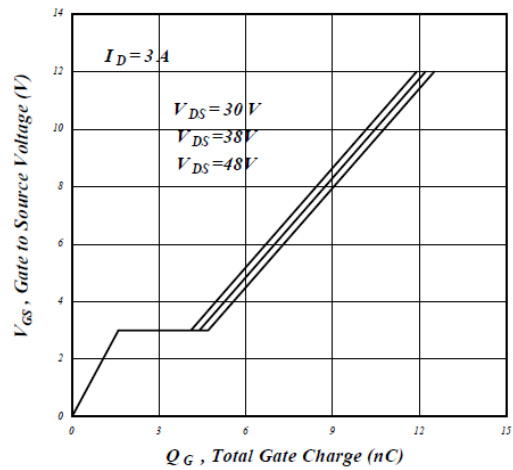
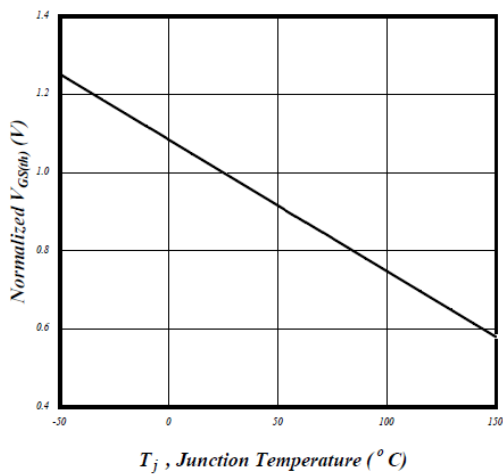
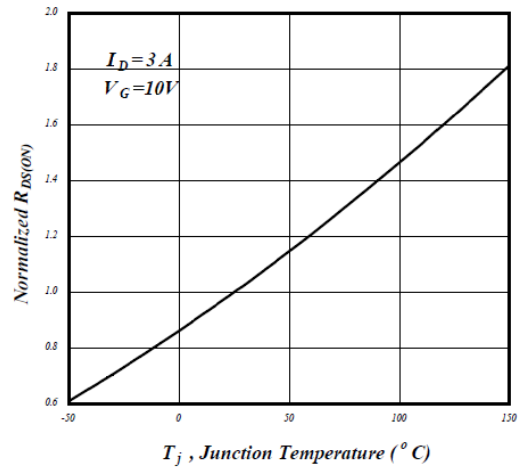
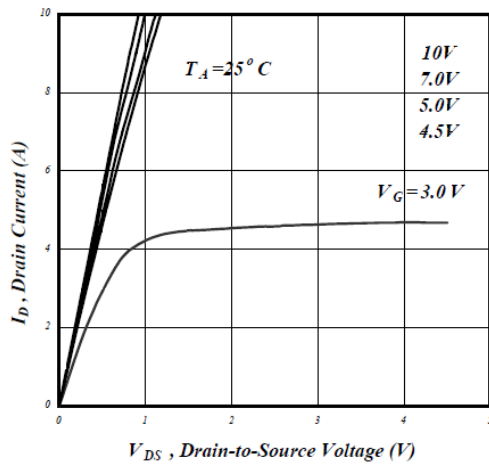
Symbol	Parameter	Typical	Unit
V _{DS}	Drain-Source Voltage	60	V
V _{GS}	Gate-Source Voltage	±20	V
I _D	Continuous Drain Current	T _A =25°C	2.8
		T _A =70°C	2.2
I _{DM}	Pulsed Drain Current	10	A
P _D	Power Dissipation	T _A =25°C	1.4
		T _A =70°C	0.9
T _J	Operating Junction Temperature Range	-55 to +150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient	90	°C/W

Electrical Characteristics

T_A=25°C Unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	60			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	1		3	V
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±20V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =60V, V _{GS} =0V			1	uA
		V _{DS} =48V, V _{GS} =0V, T _J =125℃			10	
I _S	Continuous Source Current	V _G =V _D =0V, Force Current			6.1	A
I _{SM}	Pulsed Source Current				24.4	
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =10V, I _D =3A		85	92	mΩ
		V _{GS} =4.5V, I _D =2A		90	100	
g _{FS}	Forward Transconductance	V _{DS} =10V, I _D =3A		3.6		S
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =1A			1.2	V
t _{rr}	Reverse Recovery Time	I _S =3A, V _{GS} =0V		25		Ns
Q _{rr}	Reverse Recovery Charge	dI/dt=100A/μs		26		nC
Dynamic						
Q _g	Total Gate Charge	V _{DS} =48V, V _{GS} =4.5V, I _D =3A		6		nC
Q _{gs}	Gate-Source Charge			1.6		
Q _{gd}	Gate-Drain Charge			3		
C _{iSS}	Input Capacitance	V _{DS} =25V,V _{GS} =0V, f=1MHz		490		pF
C _{oSS}	Output Capacitance			55		
C _{rSS}	Reverse Transfer Capacitance			40		
t _{d(on)}	Turn-On Time ²	V _{DD} =30V, I _D =1A, V _{GS} =4.5V, R _G =6.8Ω		6		ns
t _r				5		
t _{d(off)}	Turn-Off Time			16		
t _f				3		

Typical Performance Characteristics



Typical Performance Characteristics (Continue)

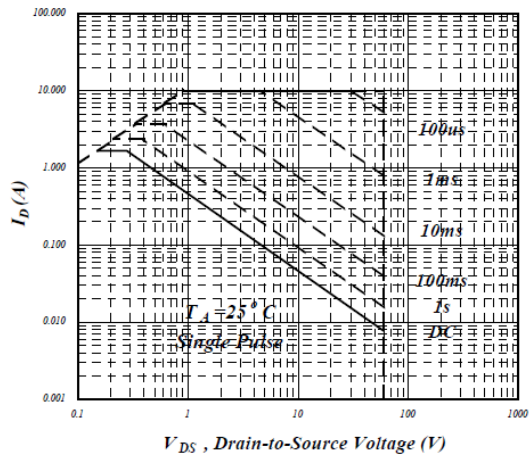


Fig. 7 Maximum Safe Operation Area

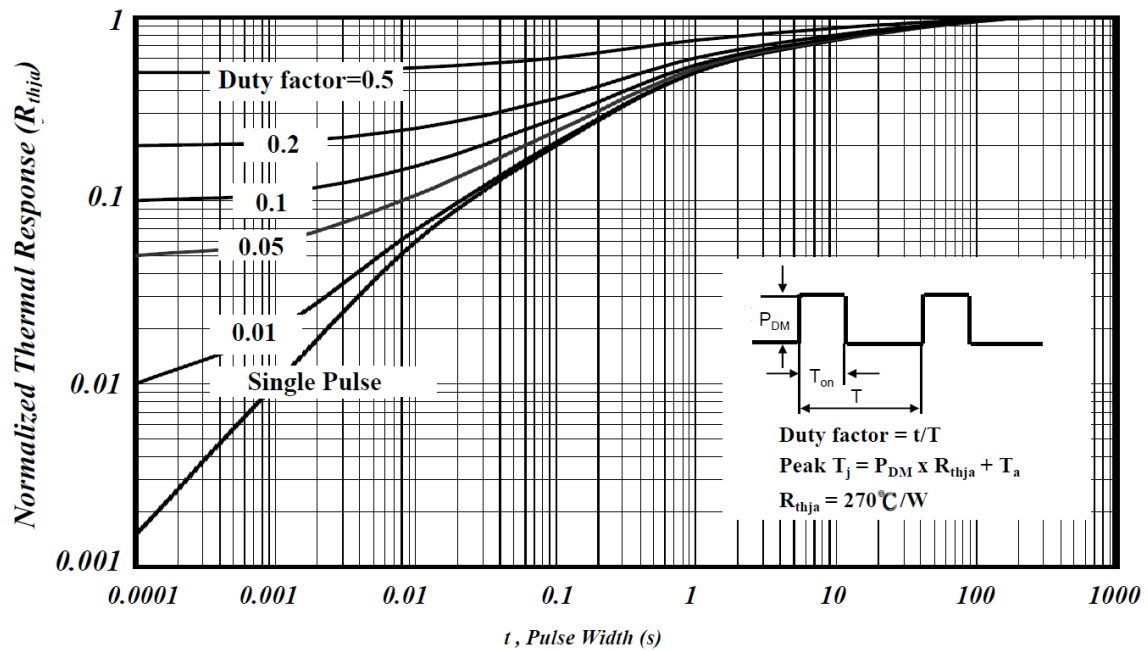
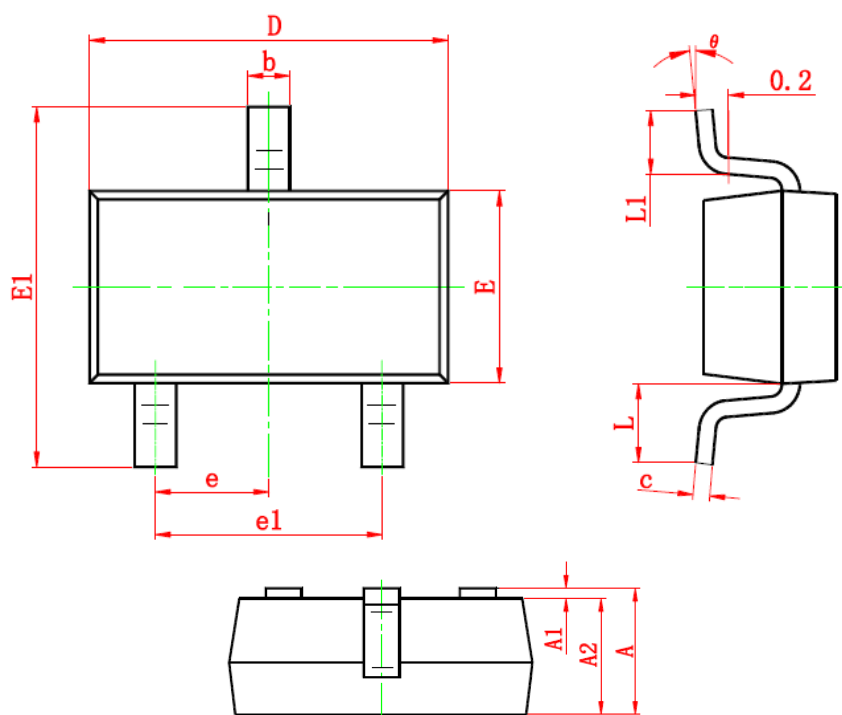


Fig. 11 Transient Thermal Response

Package Dimension

SOT-23



Dimensions

Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.900	1.200	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.100	0.035	0.039
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	6°

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