

GSM3153JZF

-30V P-Channel MOSFET

Product Description

GSM3153JZF, P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

This device is particularly suited for low voltage power management, such as smart phone and notebook computer and low in-line power loss are needed in commercial industrial surface mount applications.

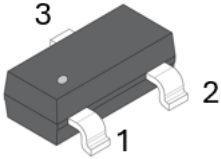
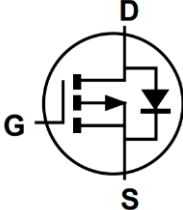
Features

- $R_{DS(ON)}=54m\Omega@V_{GS}=-10V$
- $R_{DS(ON)}=72m\Omega@V_{GS}=-4.5V$
- $R_{DS(ON)}=98m\Omega@V_{GS}=-2.5V$
- SOT-23 Package
- RoHS Compliant and Halogen Free

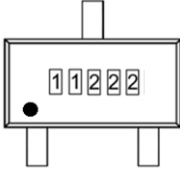
Applications

- Drivers: Relays, Solenoids, Lamps
- Battery Operated Systems
- Power Supply Converter Circuits
- Load Switch

Packages & Pin Assignments

SOT-23			Equivalent Circuit		
					
Pin	Symbol	Description	Pin	Symbol	Description
1	G	Gate	3	D	Drain
2	S	Source			

Ordering and Marking Information

Ordering Information			
Part Number	Package	Part Marking	Quantity / Reel
GSM3153JZF	SOT-23	3I□□□ 3S□□	3,000 PCS
GSM3153 1 2			
- Product Code: GSM3153 - Package Code: 1 is JZ for SOT-23 - Green Level: 2 is F for RoHS Compliant and Halogen Free			
Marking Information			
 - Product Code: 1 is 3I or 3S - GS Code: 2 is □□□ or □□ - The dot • denotes Pin 1			

Absolute Maximum Ratings (T_A=25°C, unless otherwise specified)

Symbol	Parameter	Value	Unit
V _{DSS}	Drain-Source Voltage	-30	V
V _{GSS}	Gate-Source Voltage	±12	V
I _D	Continuous Drain Current ^{2, 3}	T _A =25°C	A
		T _A =70°C	
I _{DM}	Pulsed Drain Current ¹	-16.8	A
P _D	Power Dissipation ^{2, 3}	T _A =25°C	W
		T _A =70°C	
R _{θJA}	Thermal Resistance-Junction to Ambient ²	104	°C/W
R _{θJA}	Thermal Resistance-Junction to Ambient ^{2, 3}	65	°C/W
T _J	Operating Junction Temperature Range	-55 to +150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C

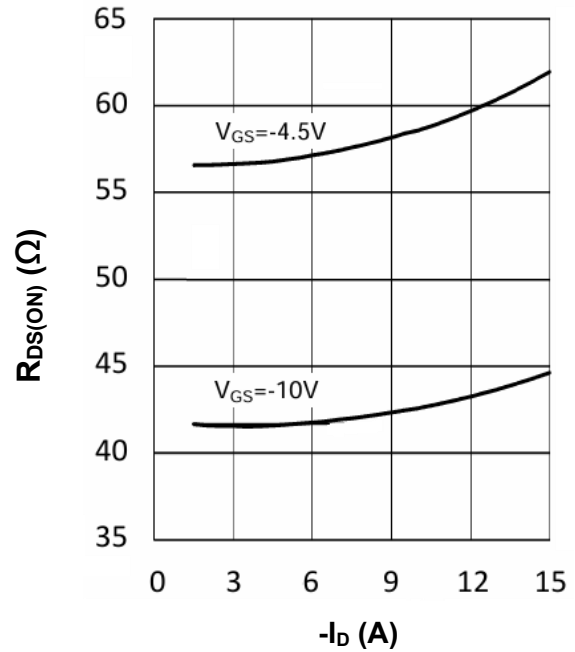
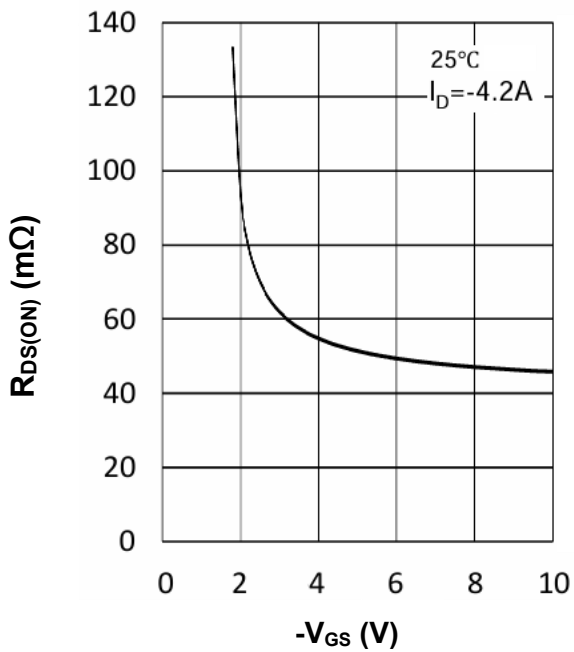
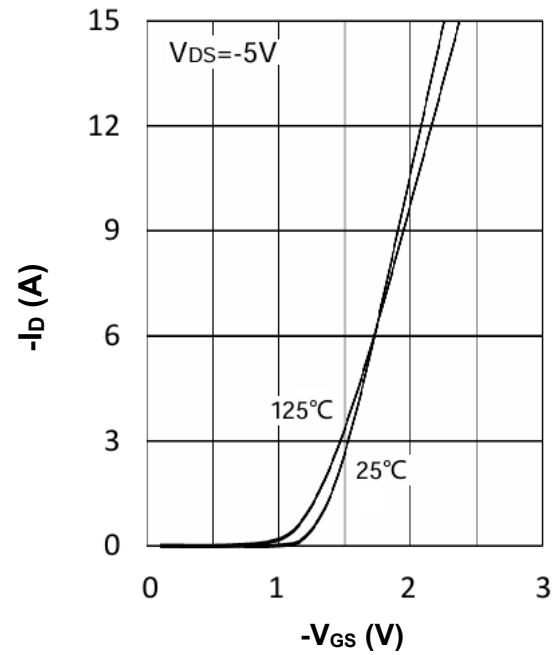
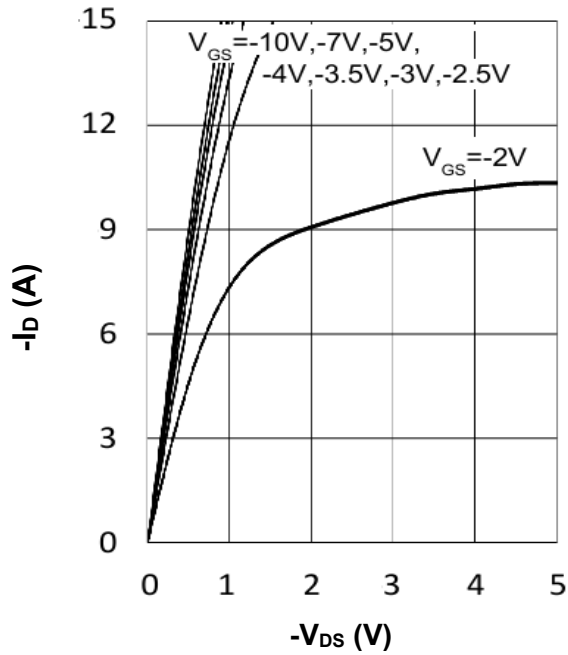
NOTE:

- Single pulse width is limited by max junction temperature.
- The device was mounted on 1in² FR-4 board with 2oz.copper.
- t ≤ 10s

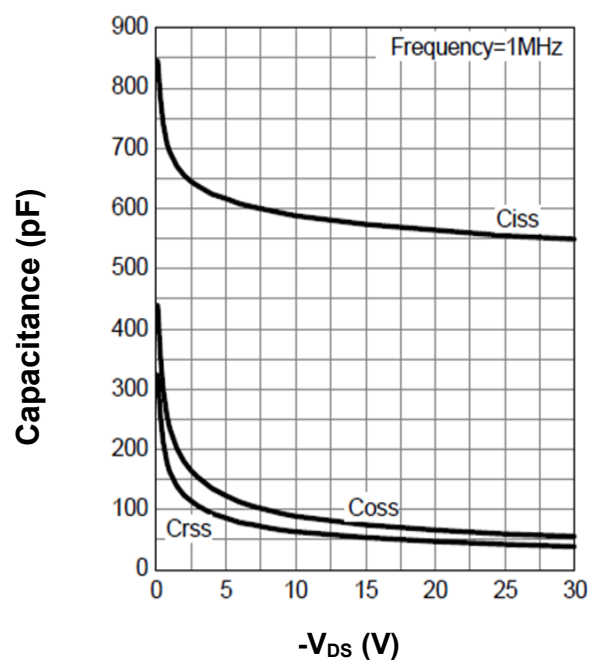
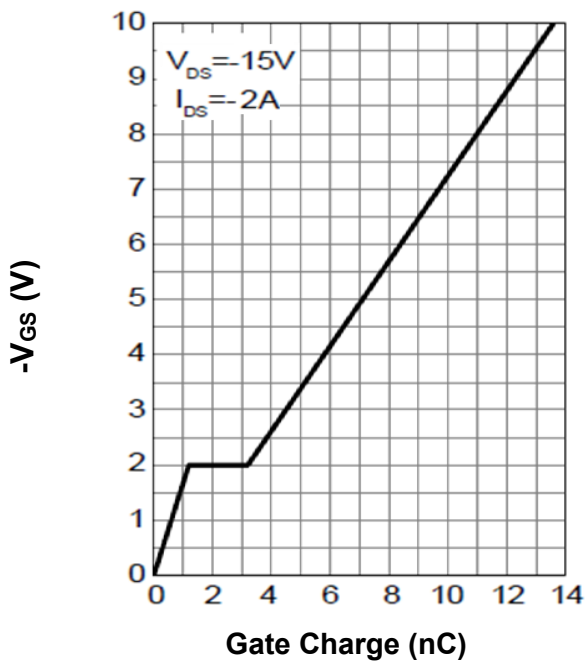
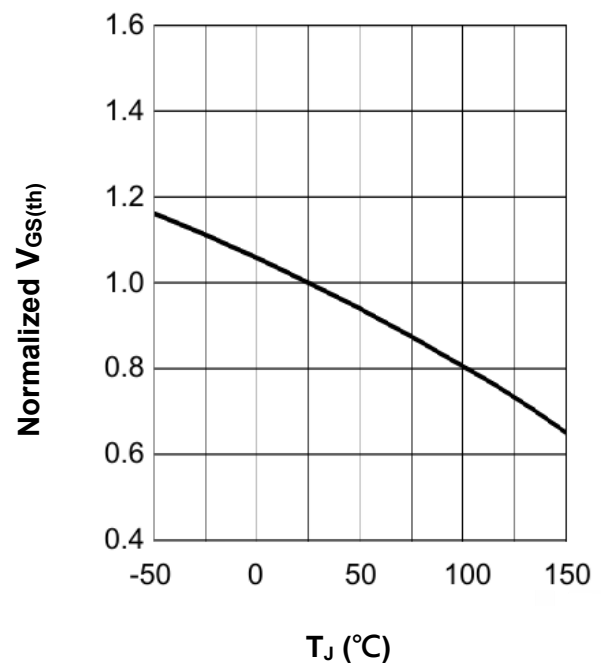
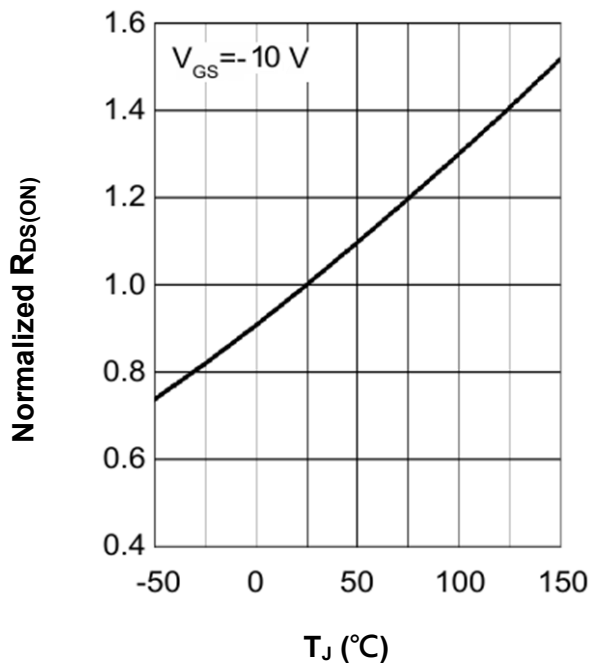
Electrical Characteristics (T_A=25°C, unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-30	-	-	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-30V, V _{GS} =0V	-	-	-1	μA
I _{GSS}	Gate-Source Leakage Current	V _{DS} =0V, V _{GS} =±12V	-	-	±10	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-0.7	-	-1.3	V
R _{DS(ON)}	Drain-Source On-Resistance	V _{GS} =-10V, I _D =-4.2A	-	42	54	mΩ
		V _{GS} =-4.5V, I _D =-3A	-	52	72	
		V _{GS} =-2.5V, I _D =-2A	-	78	98	
g _{FS}	Forward Transconductance	V _{DS} =-5V, I _D =-0.5A	-	3	-	S
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, f=1MHz	-	573	-	pF
C _{oss}	Output Capacitance		-	74	-	
C _{rss}	Reverse Transfer Capacitance		-	53	-	
Q _g	Total Gate Charge	V _{DS} =-15V, I _D =-2A V _{GS} =-10V,	-	13.6	-	nC
Q _{gs}	Gate-Source Charge		-	1.2	-	
Q _{gd}	Gate-Drain Charge		-	2.0	-	
t _{d(on)}	Turn-On Delay Time	V _{DD} =-15V, I _D =-2A, V _{GS} =-10V, R _G =6Ω	-	6.9	-	ns
t _r	Turn-On Rise Time		-	12.3	-	
t _{d(off)}	Turn-Off Delay Time		-	25	-	
t _f	Turn-Off Fall Time		-	13	-	
Diode Characteristics						
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =-1A	-	-0.7	-1	V

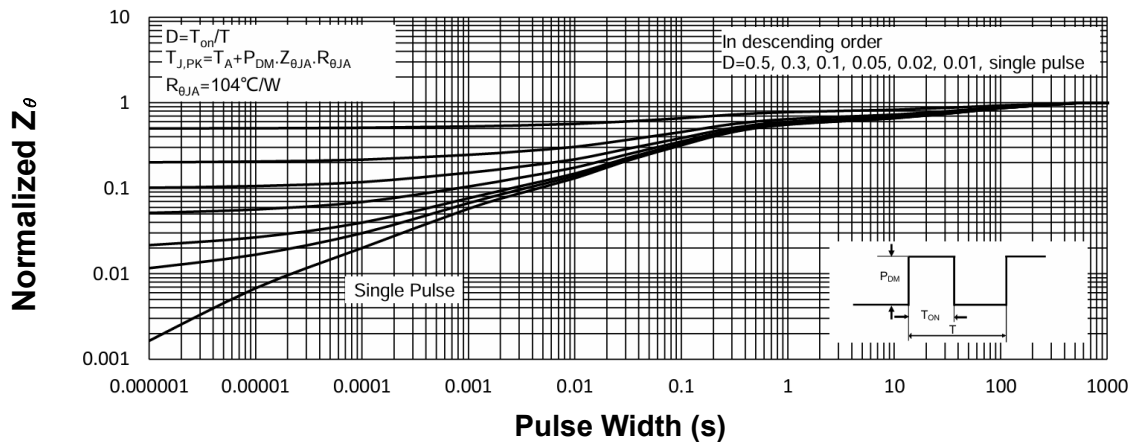
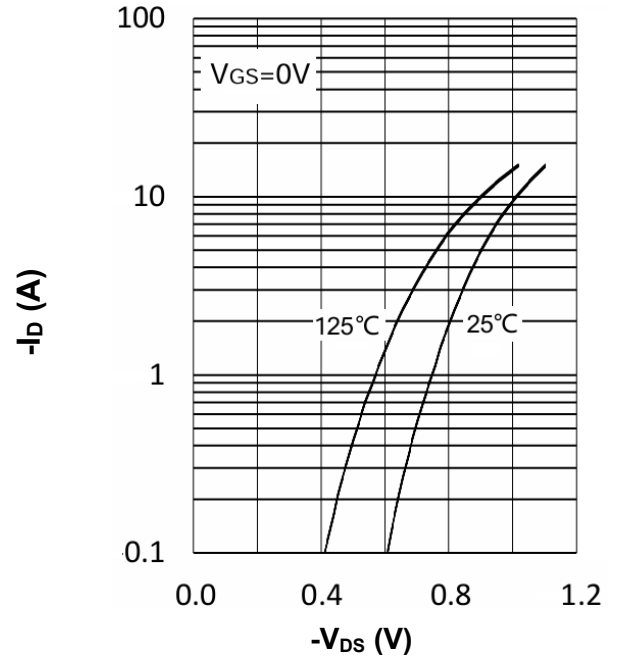
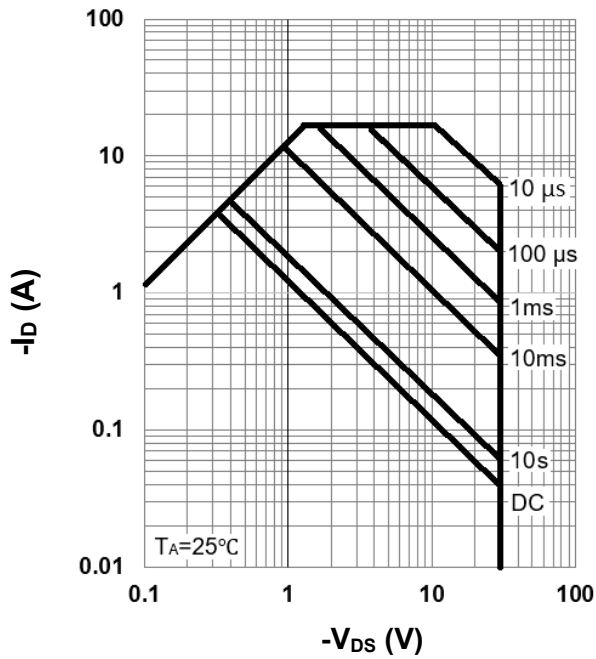
Typical Performance Characteristics



Typical Performance Characteristics

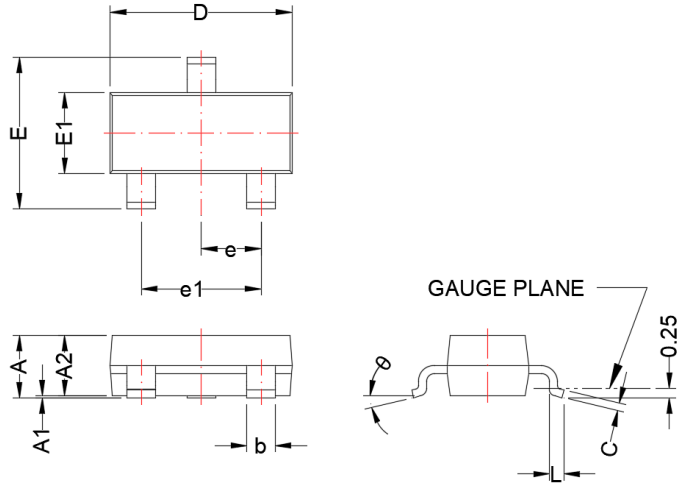


Typical Performance Characteristics

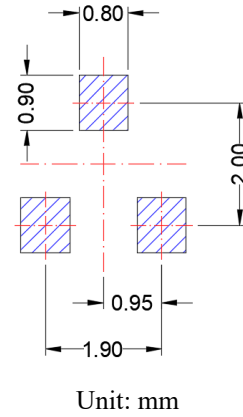


SOT-23

Package Dimension



Recommended Land Pattern



Dimensions				
Symbol	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.75	1.17	0.030	0.046
A1	0.00	0.15	0.000	0.006
A2	0.70	1.05	0.028	0.041
b	0.30	0.50	0.012	0.020
c	0.08	0.20	0.003	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.037 BSC	
e1	1.90 BSC		0.075 BSC	
L	0.30	0.60	0.012	0.024
θ	0°	8°	0°	8°

NOTE:

Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

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