

GSM1433

30V P-Channel Enhancement Mode MOSFET

Product Description

GSM1433, P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

These devices are particularly suited for low voltage power management, such as smart phone and notebook computer and other battery powered circuits, and low in-line power loss are needed in commercial industrial surface mount applications.

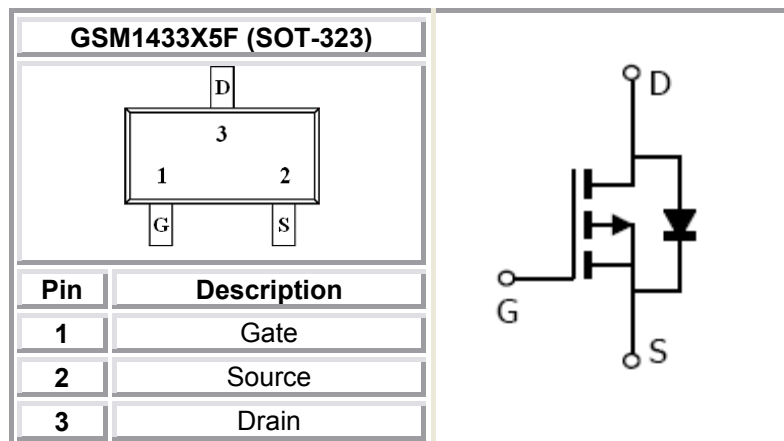
Features

- -30V/-3.0A , $R_{DS(ON)}= 150m\Omega@V_{GS}=-10.0V$
- -30V/-2.6A , $R_{DS(ON)}= 185m\Omega@V_{GS}=-4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-323(SC-70) package design

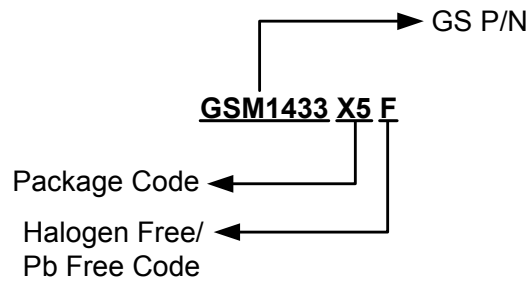
Applications

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- Net Working System

Packages & Pin Assignments

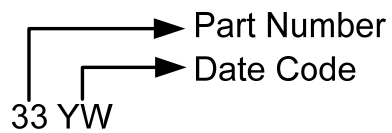


Ordering Information



Part Number	Package	Quantity
GSM1433X5F	SOT-323	3000 PCS

Marking Information



Absolute Maximum Ratings

T_A=25°C Unless otherwise noted

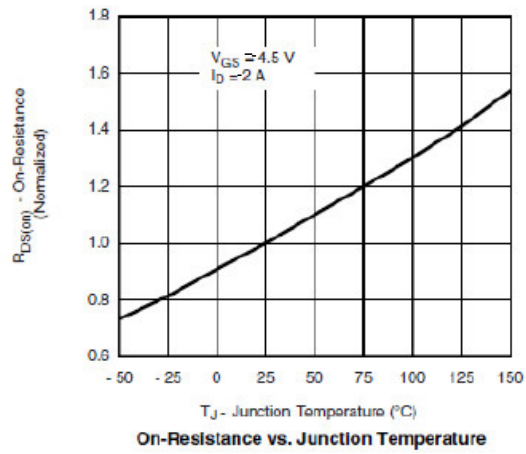
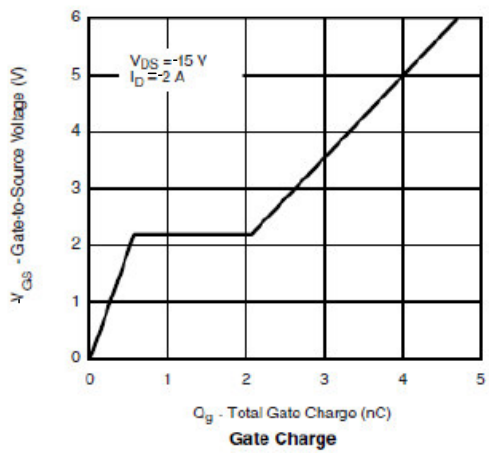
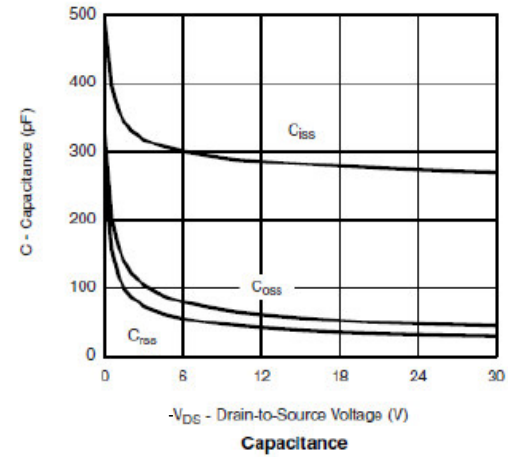
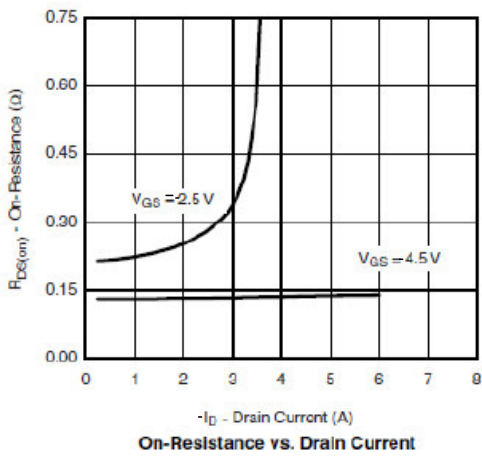
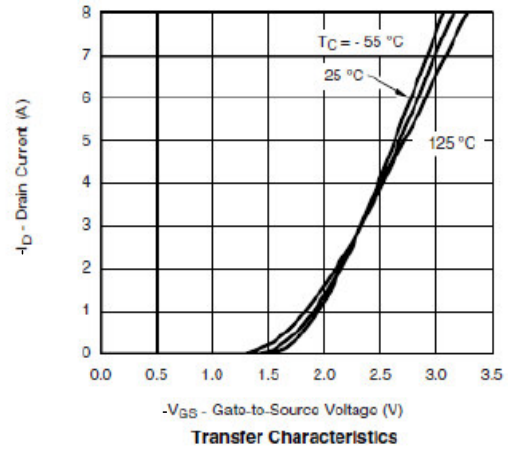
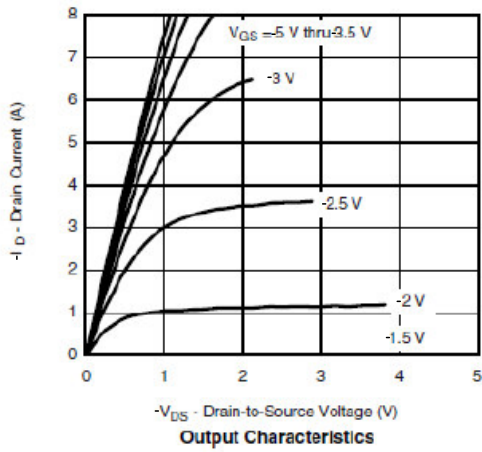
Symbol	Parameter	Typical	Unit
V _{DSS}	Drain-Source Voltage	-30	V
V _{GSS}	Gate-Source Voltage	±20	V
I _D	Continuous Drain Current(T _J =150°C)	T _A =25°C	-3.0
		T _A =70°C	-2.4
I _{DM}	Pulsed Drain Current	-10	A
I _S	Continuous Source Current(Diode Conduction)	-1.6	A
P _D	Power Dissipation	T _A =25°C	0.35
		T _A =70°C	0.22
T _J	Operating Junction Temperature	150	°C
T _{STG}	Storage Temperature Range	-55/150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient	120	°C/ W

Electrical Characteristics

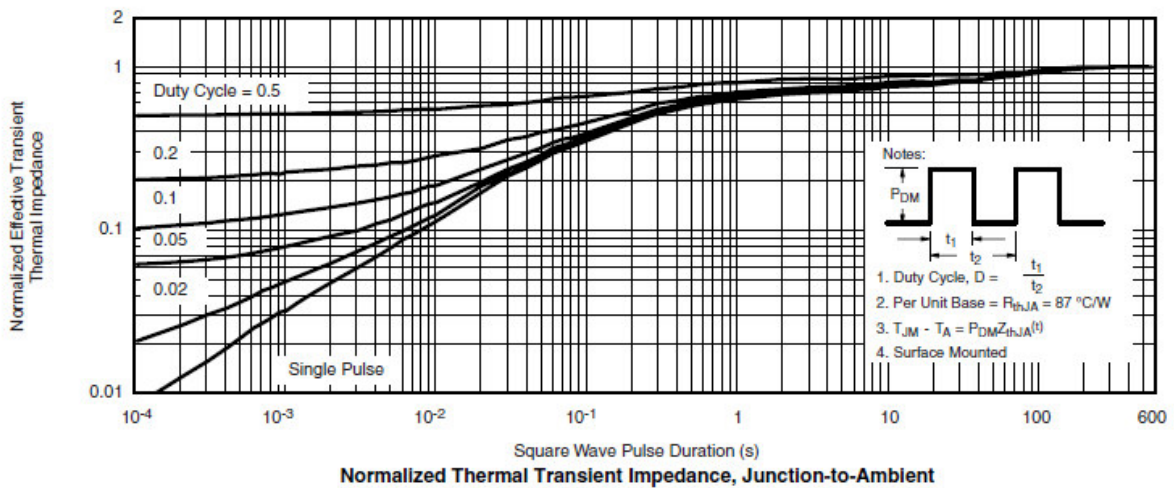
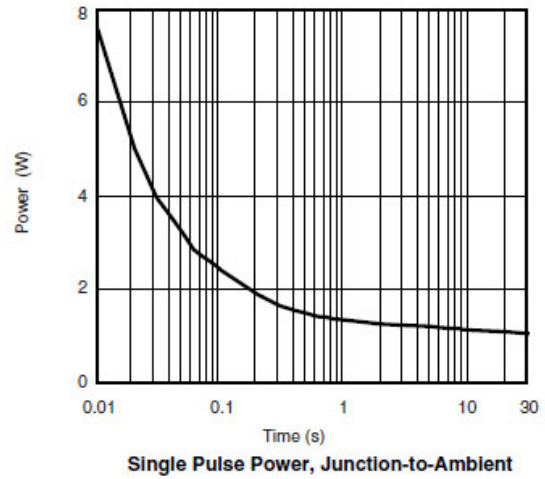
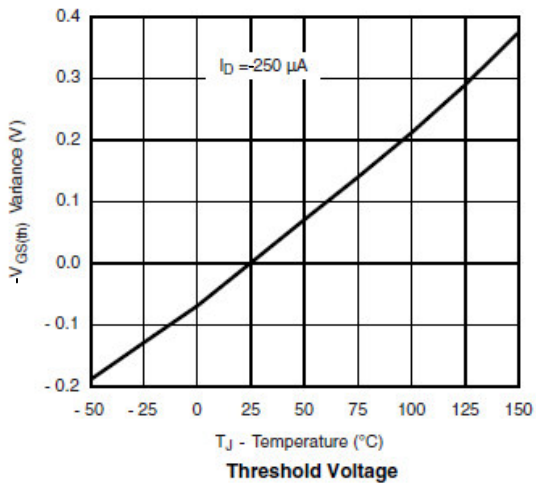
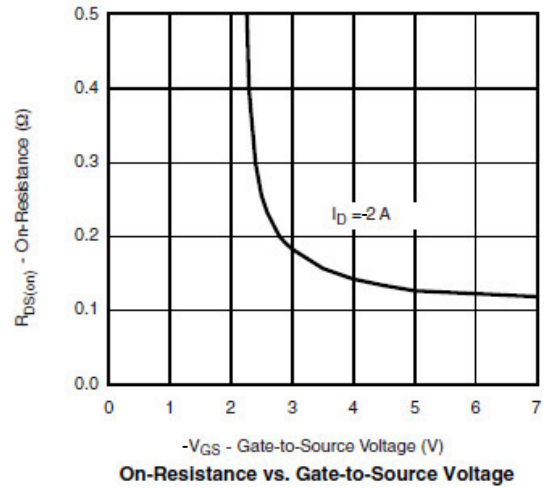
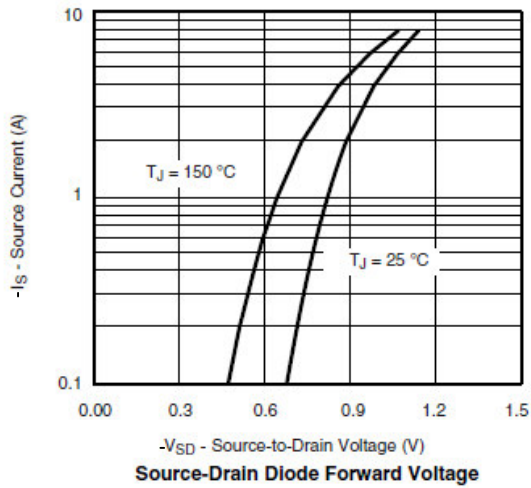
T_A=25°C unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Unit	
Static							
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-30			V	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250uA	-1.0		-2.5		
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±20V			±100	nA	
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -24V, V _{GS} =0V			-1	uA	
		V _{DS} = -24V, V _{GS} =0V, T _J =85°C			-30		
I _{D(on)}	On-State Drain Current	V _{DS} ≤ -5V, V _{GS} =-10V	-10			A	
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =-10V, I _D =-3.0A		135	150	mΩ	
		V _{GS} =-4.5V, I _D =-2.6A		170	185		
g _{fs}	Forward Transconductance	V _{DS} =-5V, I _D =-2.0A		10		S	
V _{SD}	Diode Forward Voltage	I _S =-0.6A, V _{GS} =0V		-0.7	-1.3	V	
Dynamic							
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, f=1MHz		230		pF	
C _{oss}	Output Capacitance			40			
C _{rss}	Reverse Transfer Capacitance			25			
Q _g	Total Gate Charge	V _{DS} =-15V, V _{GS} =-4.5V, I _D =-2.0A		4	6	nC	
Q _{gs}	Gate-Source Charge			0.6			
Q _{gd}	Gate-Drain Charge			1.5			
t _{d(on)}	Turn-On Time	V _{DD} =-15V, R _L =15Ω, I _D =-2.0A, V _{GEN} =-10V, R _G =6Ω		5	10	ns	
t _r				8	15		
t _{d(off)}			Turn-Off Time		15		30
t _f					15		30

Typical Performance Characteristics

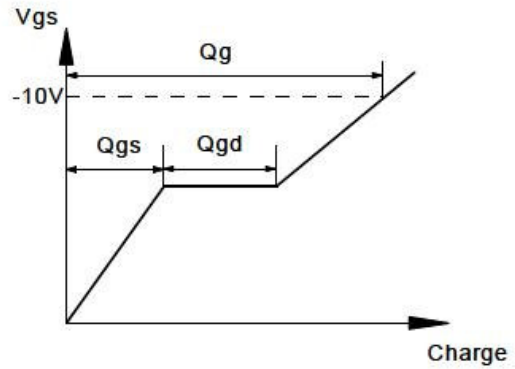
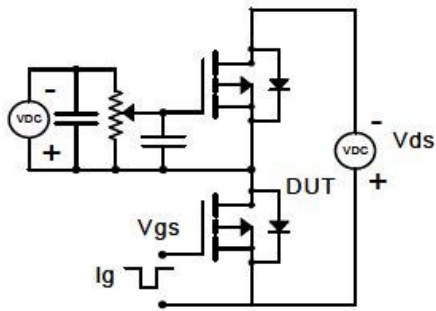


Typical Characteristics

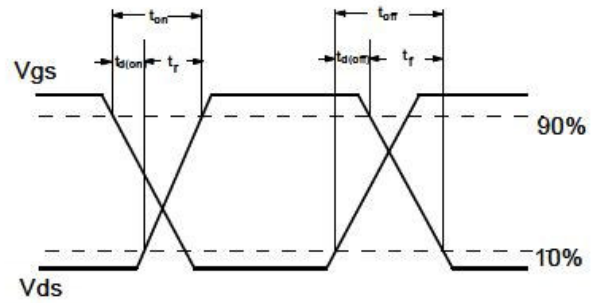
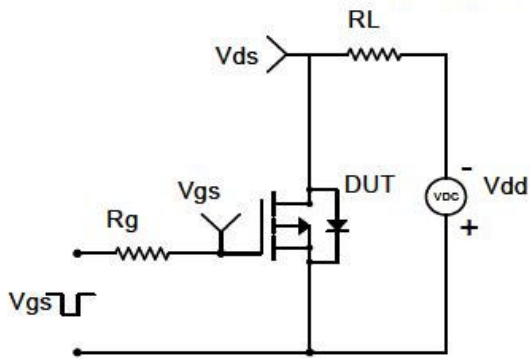


Typical Characteristics

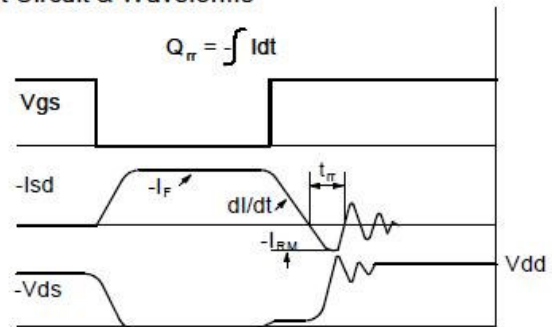
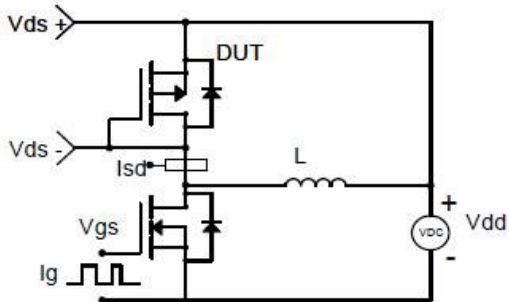
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

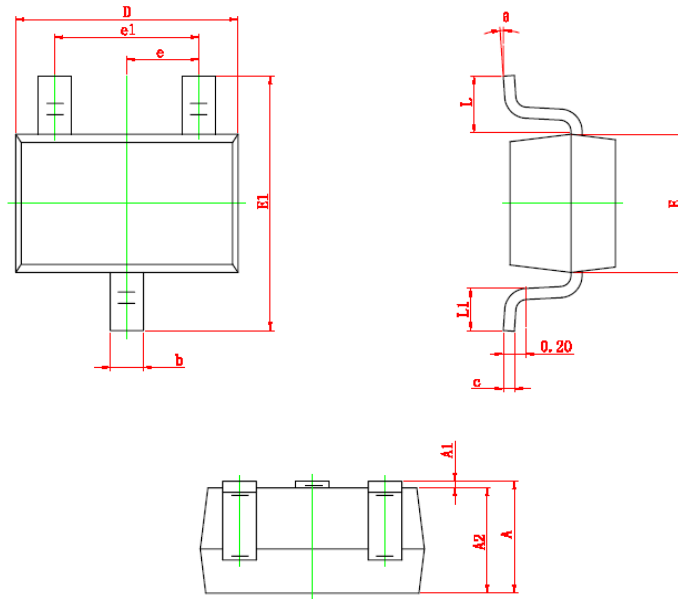


Diode Recovery Test Circuit & Waveforms



Package Dimension

SOT-323 PLASTIC PACKAGE







Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°



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