

GSM7002T

60V Dual N-Channel Enhancement Mode MOSFET

Product Description

The GSM7002T is the Dual N-Channel enhancement mode field effect transistors are produced using high cell density DMOS technology.

These products have been designed to minimize on-state resistance while provide rugged, reliable, and fast switching performance.

They can be used in most applications requiring up to 640mA DC and can deliver pulsed currents up to 950mA. These products are particularly suited for low voltage, low current applications such as small servo motor control, power MOSFET gate drivers, and other switching applications.

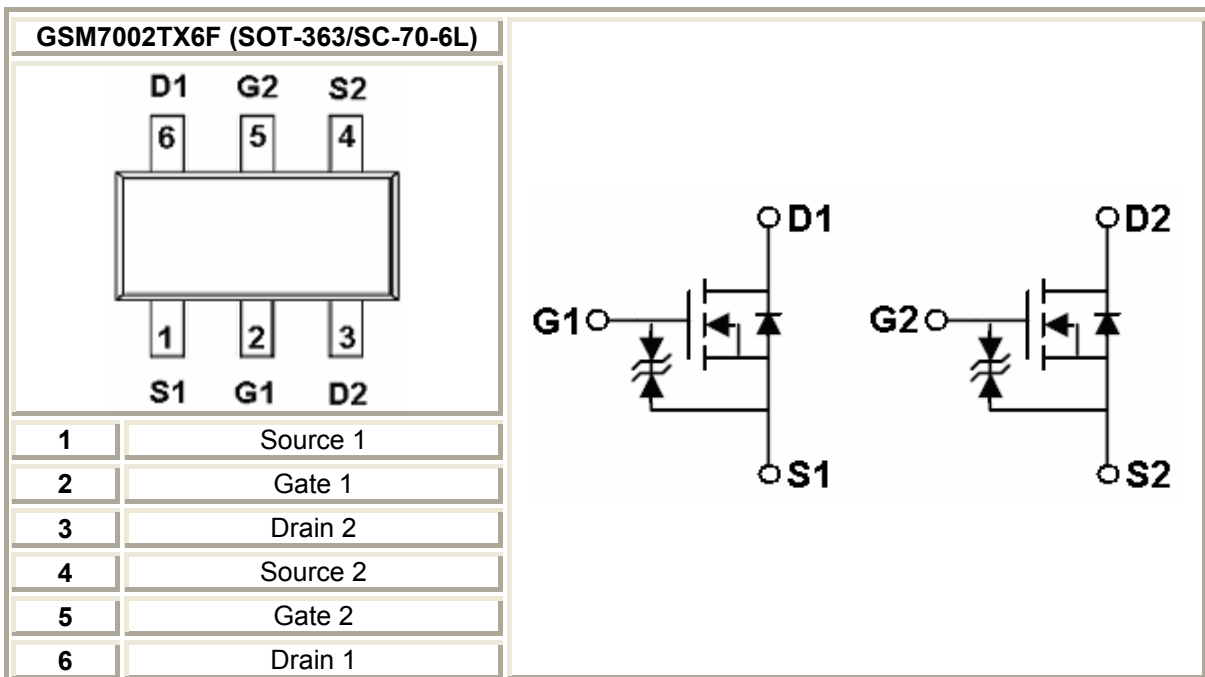
Features

- 60V/0.50A , $R_{DS(ON)} = 2.0m\Omega @ V_{GS} = 10V$
- 60V/0.20A , $R_{DS(ON)} = 4.0m\Omega @ V_{GS} = 4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-363 package design

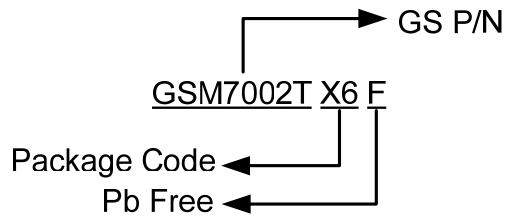
Applications

- Drivers: Relays, Solenoids, Lamps, Hammers, Display , Memories, Transistors, etc.
- High saturation current capability. Direct Logic-Level Interface: TTL/CMOS
- Battery Operated Systems
- Solid-State Relays

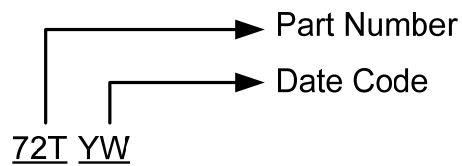
Packages & Pin Assignments



Ordering Information



Marking Information



Part Number	Package	Part Marking
GSM7002TX6F	SOT-363	72TYW

Absolute Maximum Ratings

TA=25°C Unless otherwise noted

Symbol	Parameter	Typical	Unit	
V _{DSS}	Drain-Source Voltage	60	V	
V _{GSS}	Gate –Source Voltage-Continuous	±20	V	
I _D	Continuous Drain Current(T _J =150°C)	TA =25°C	0.64	A
I _{DM}	Pulsed Drain Current (*)	0.95	A	
PD	Power Dissipation	TA =25°C	1.35	W
T _J	Operating Junction Temperature	-55/150	°C	
T _{STG}	Storage Temperature Range	-55/150	°C	
R _{θJA}	Thermal Resistance-Junction to Ambient	375	°C/W	

(*) Pulse width limited by safe operating area

Electrical Characteristics

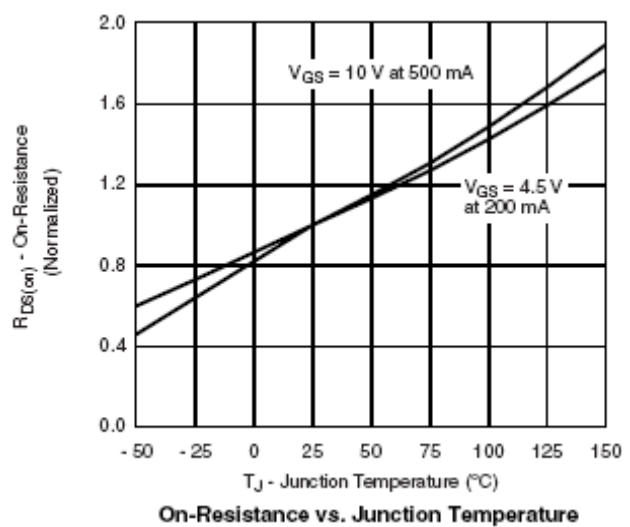
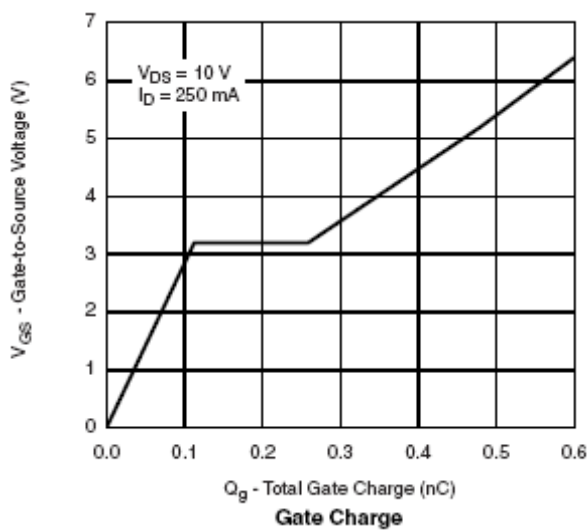
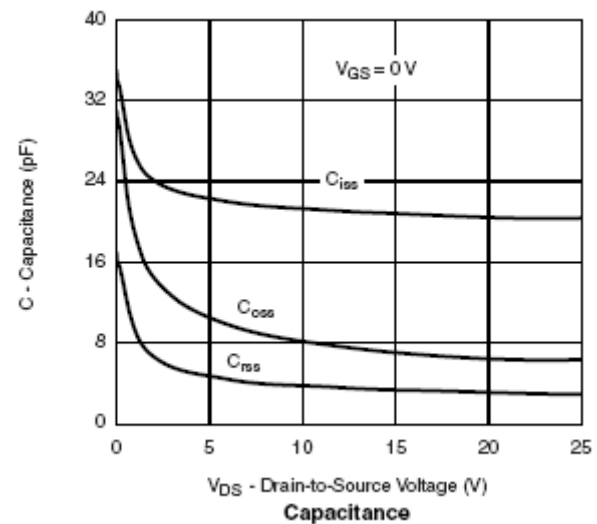
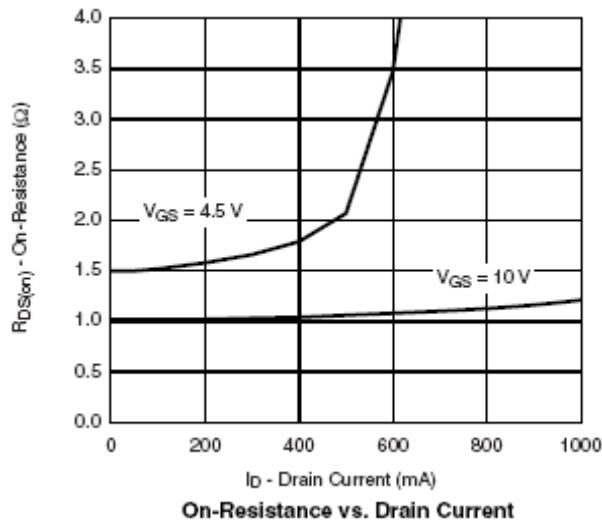
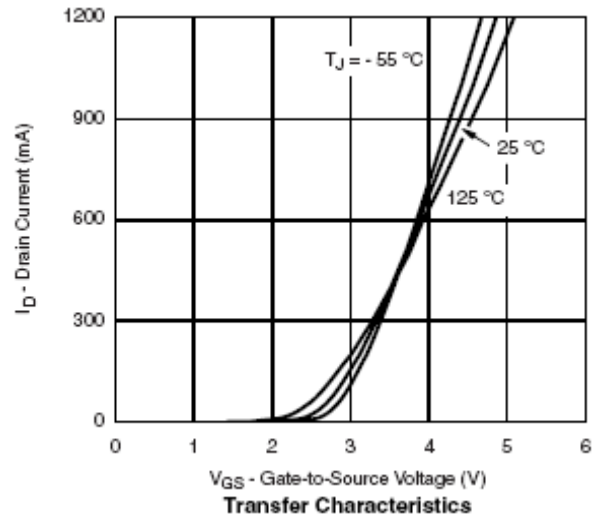
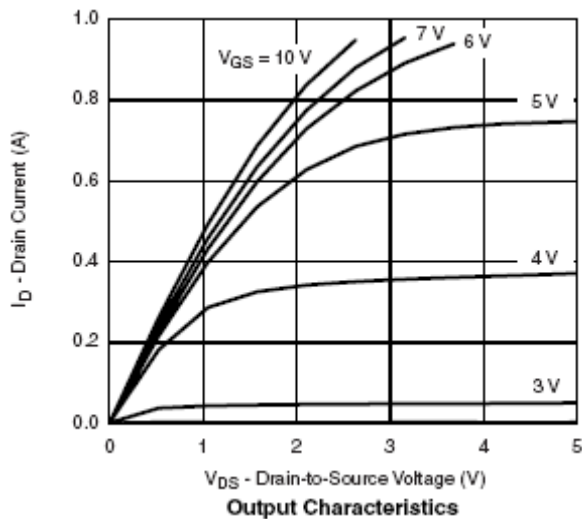
TA=25°C Unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	60			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.7	2.5	
I_{GSS}	Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$			± 30	μA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=60V, V_{GS}=0V, T_J=25^\circ C$			10	μA
		$V_{DS}=48V, V_{GS}=0V, T_J=70^\circ C$			100	
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V, I_D=0.50A$			2.0	Ω
		$V_{GS}=4.5V, I_D=0.20A$			4.0	
$G_{fs(1)}$	Forward Transconductance	$V_{DS}=10V, I_D=0.6A$		0.6		S
$V_{SD(1)}$	Diode Forward Voltage	$V_{GS}=0V, I_S=1.2A$			1.2	V
Dynamic						
Q_g	Total Gate Charge	$V_{DD}=50V, I_D=0.6A$ $V_{GS}=4.5V$		1.0	1.6	nC
Q_{gs}	Gate-Source Charge			0.5		
Q_{gd}	Gate-Drain Charge			0.5		
C_{iss}	Input Capacitance	$V_{DS}=25V, f=1MHz$ $V_{GS}=0V$		32	50	pF
C_{oss}	Output Capacitance			8		
C_{rss}	Reverse Transfer Capacitance			6		
$t_{d(on)}$	Turn-On Time	$V_{DD}=30V, I_D=0.6A,$ $R_G=3.3\Omega, V_{GS}=10.0V$ $R_D=52\Omega$		12		ns
t_r				10		
$t_{d(off)}$	Turn-Off Time			56		
t_f				29		

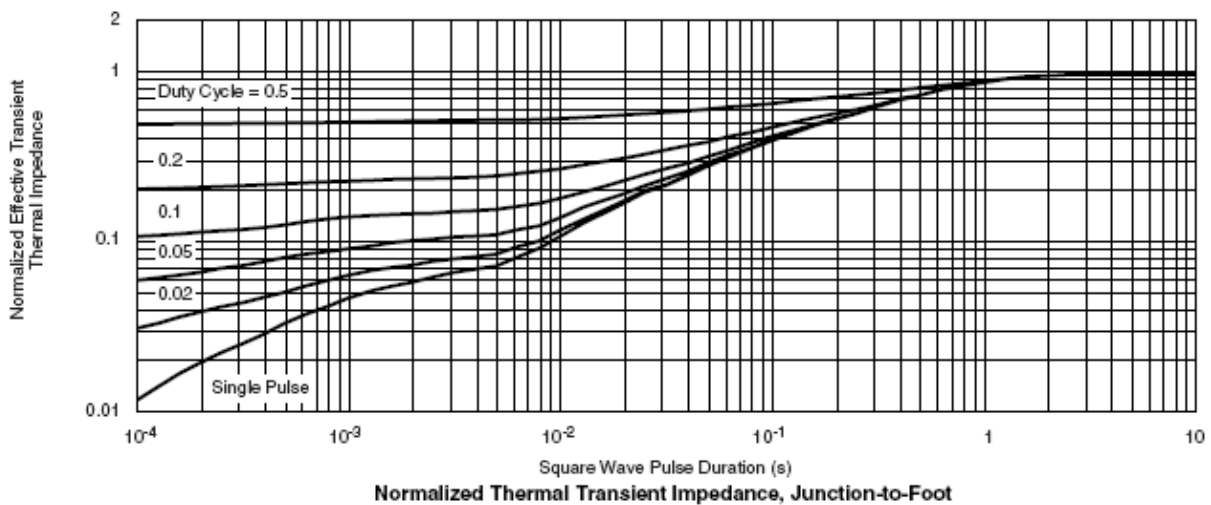
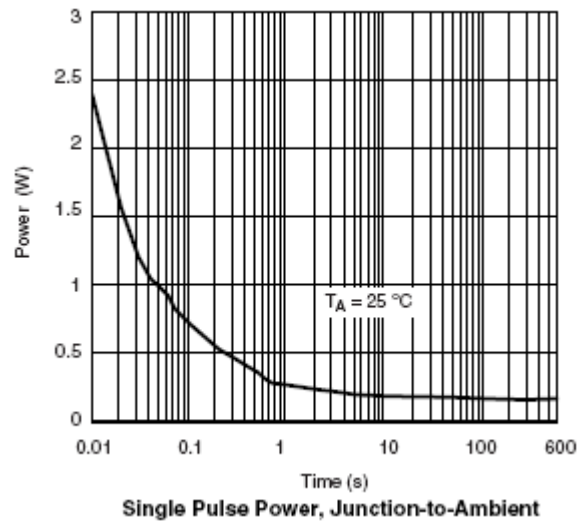
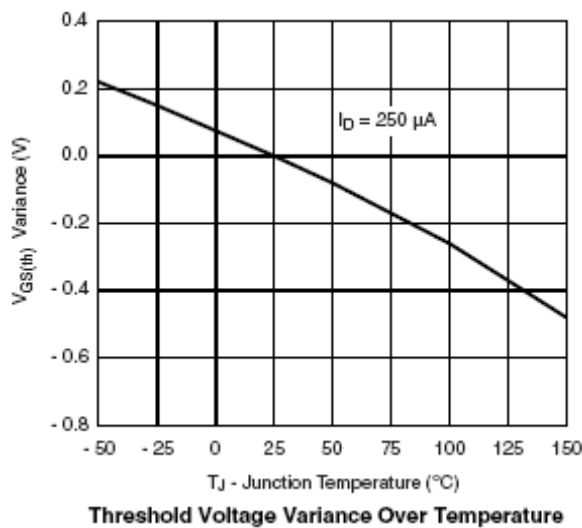
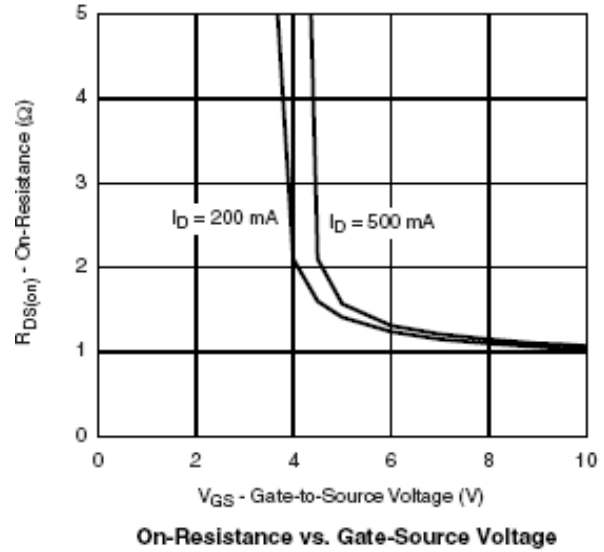
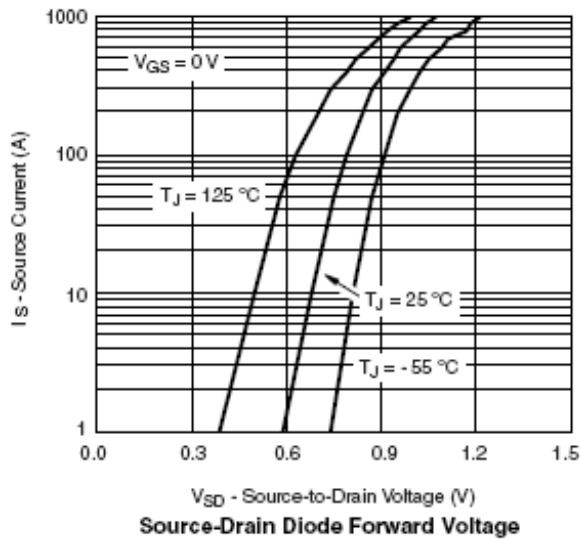
(1) Pulsed: Pulse duration = 300 μs , duty cycle 1.5 %.

(2) Pulse width limited by safe operating area.

Typical Performance Characteristics

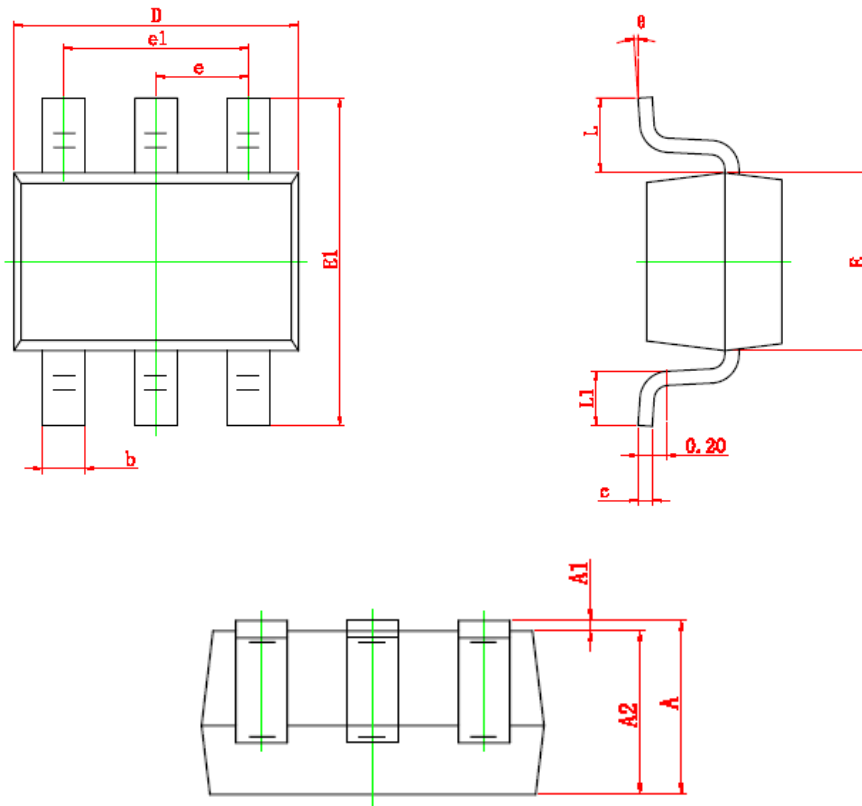


Typical Performance Characteristics(Continue)



Package Dimension

SOT-363







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	0.150	0.350	0.006	0.014
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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