

# GSM7002KY

## Dual N-Channel Enhancement Mode MOSFET

### Product Description

The GSM7002KY 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.

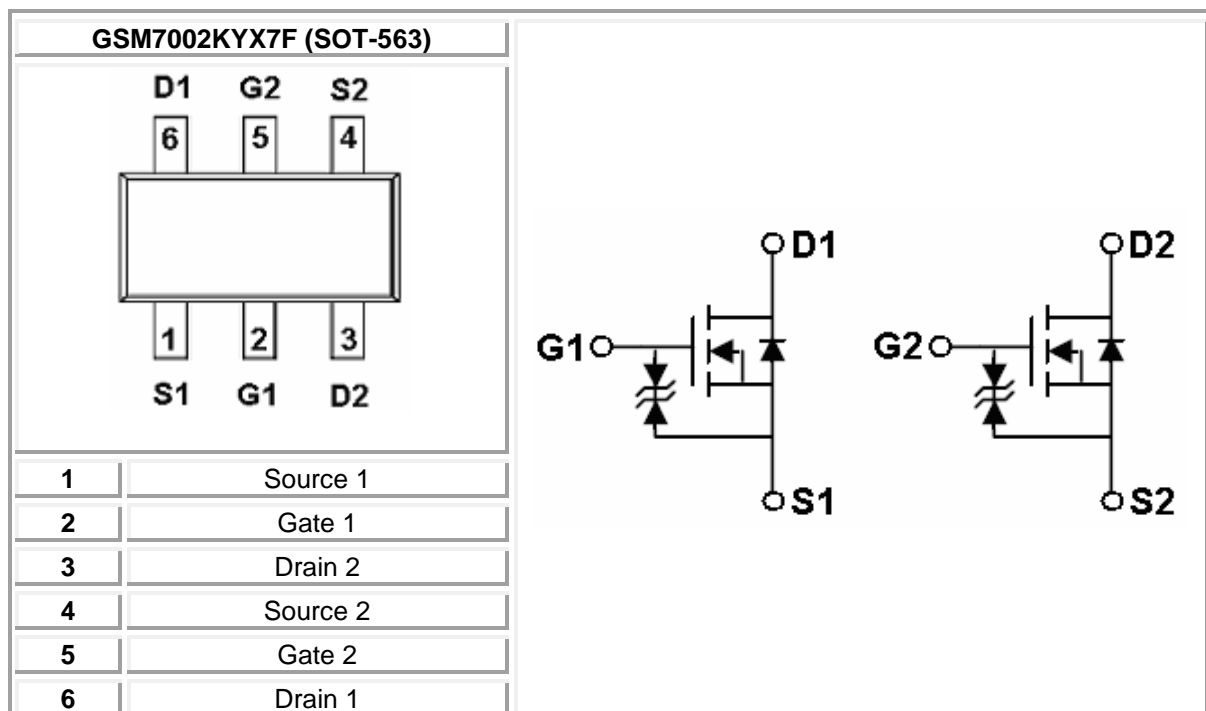
### Features

- 60V/0.5A,  $R_{DS(ON)}=3.0\Omega@V_{GS}=10V$
- 60V/0.2A,  $R_{DS(ON)}=4.0\Omega@V_{GS}=4.5V$
- Super high density cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-563 package design

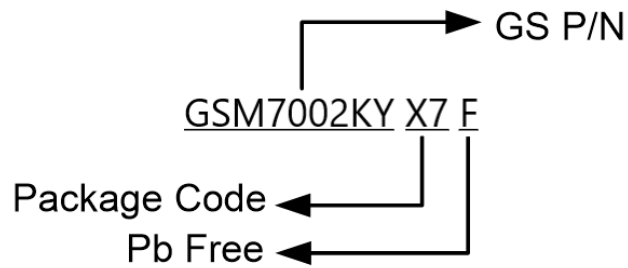
### Applications

- 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

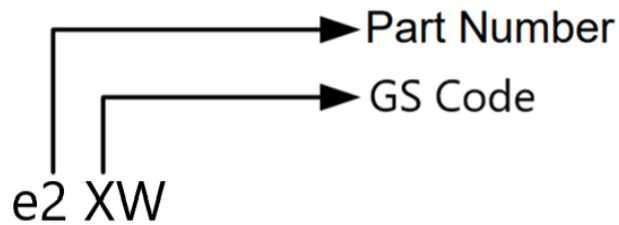
### Packages & Pin Assignments



## Ordering Information



## Marking Information



Part Number	Package	Part Marking
GSM7002KYX7F	SOT-563	e2XW

## Absolute Maximum Ratings

T<sub>A</sub>=25°C Unless otherwise noted

Symbol	Parameter	Typical	Unit	
V <sub>DS</sub>	Drain-Source Voltage	60	V	
V <sub>GS</sub>	Gate-Source Voltage	±20	V	
I <sub>D</sub>	Drain Current-Continuous	T <sub>A</sub> = 25°C	270	mA
		T <sub>A</sub> = 70°C	216	mA
I <sub>DM</sub>	Pulsed Drain Current <sup>1</sup>	0.95	A	
P <sub>D</sub>	Power Dissipation	T <sub>A</sub> = 25°C	0.35	W
		T <sub>A</sub> = 70°C	0.22	W
R <sub>θJA</sub>	Thermal Resistance-Junction to Ambient	357	°C/W	
T <sub>J</sub>	Junction Temperature Range	-55 to 150	°C	
T <sub>STG</sub>	Storage Temperature Range	-55 to 150	°C	

(1) Pulse width limited by safe operating area.

## Electrical Characteristics

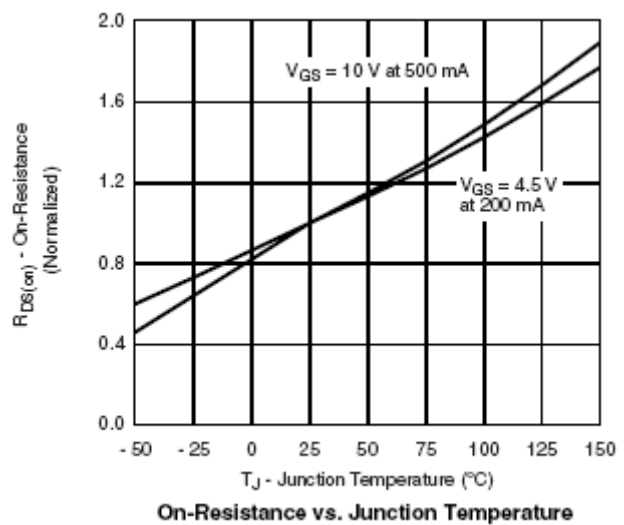
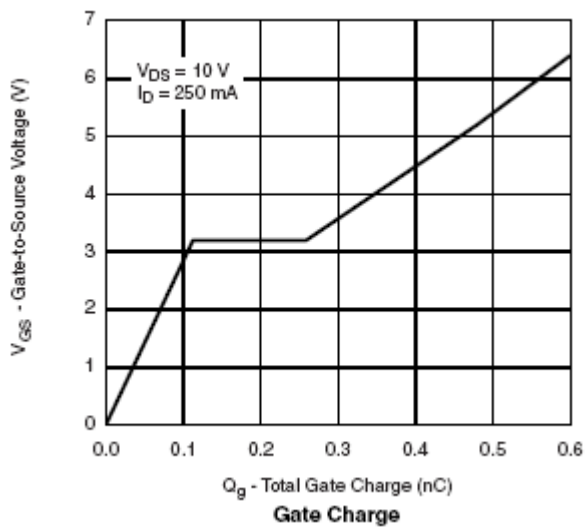
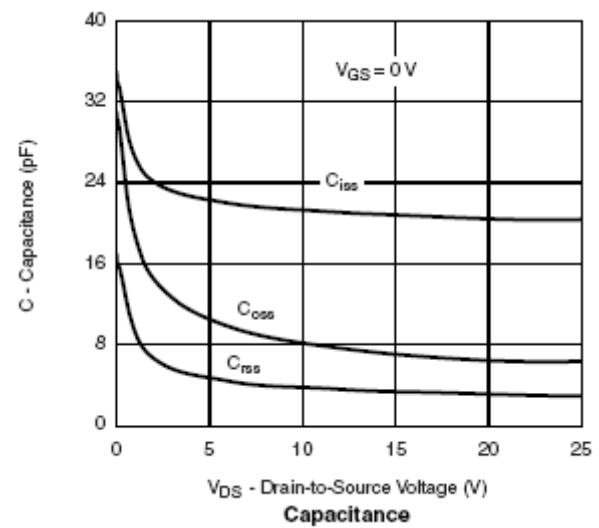
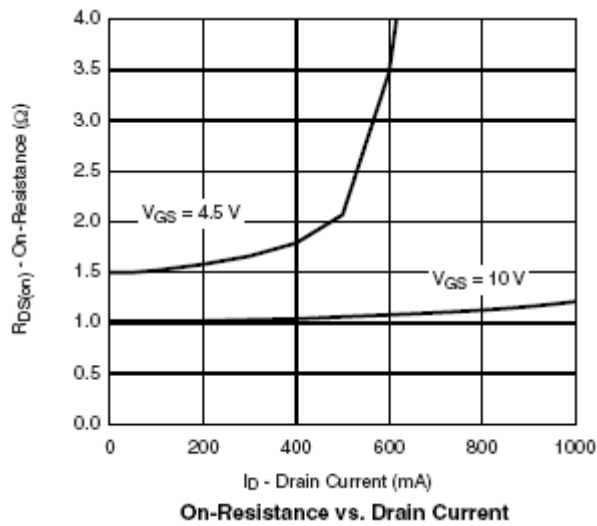
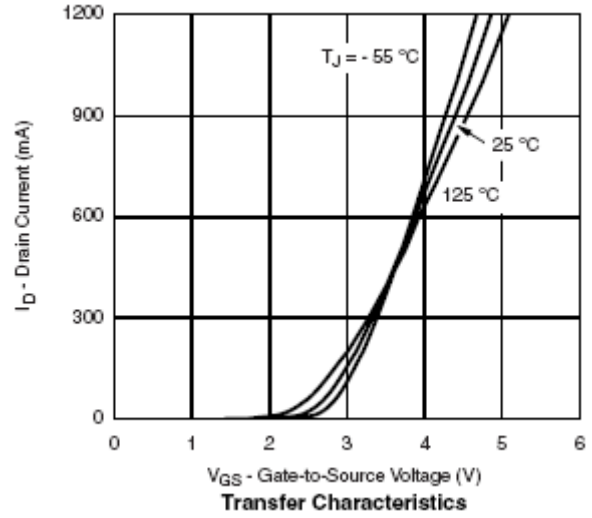
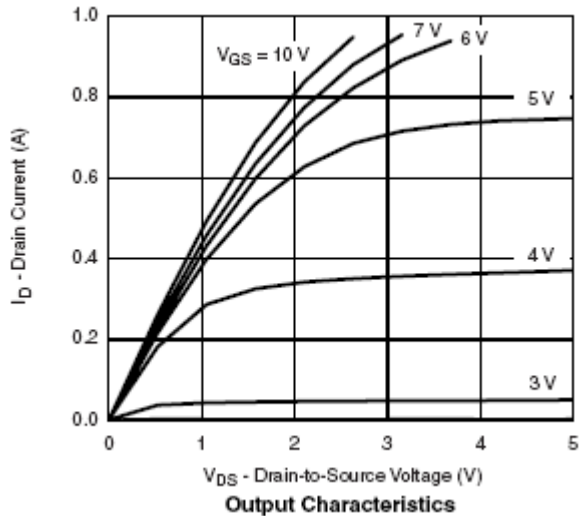
T<sub>J</sub>=25°C unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
<b>Static</b>						
V <sub>(BR)DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =250uA	60	-	-	V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250uA	1		2.5	V
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V,	-	-	±10	uA
I <sub>DSS</sub>	Drain-Source Leakage Current`	V <sub>DS</sub> =60V, V <sub>GS</sub> =0V, T <sub>J</sub> =25°C	-	-	1	uA
		V <sub>DS</sub> =60V, V <sub>GS</sub> =0V, T <sub>J</sub> =85°C	-	-	30	
R <sub>DS(on)</sub>	Static Drain-Source On-Resistance	V <sub>GS</sub> =10V, I <sub>D</sub> =500mA	-	-	3	Ω
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =200mA	-	-	4	
<b>Dynamic</b>						
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> = 25V, f =1MHz, V <sub>GS</sub> =0V	-	32		pF
C <sub>oss</sub>	Output Capacitance		-	8		
C <sub>rss</sub>	Reverse Transfer Capacitance		-	6		
Q <sub>g</sub>	Total Gate Charge	V <sub>DD</sub> =10V, I <sub>D</sub> =0.25A, V <sub>GS</sub> =4.5V		1000		pC
Q <sub>gs</sub>	Gate-Source Charge			100		
Q <sub>gd</sub>	Gate-Drain Charge			150		
t <sub>d(on)</sub>	Turn-On Time	V <sub>DD</sub> =30V, I <sub>D</sub> =0.2A, R <sub>G</sub> =10Ω, V <sub>GEN</sub> =4.5V, R <sub>L</sub> =150Ω		10	20	ns
t <sub>r</sub>				35	50	
t <sub>d(off)</sub>	Turn-Off Time			20	30	
t <sub>f</sub>				40	60	
V <sub>SD</sub>	Diode Forward Voltage	I <sub>S</sub> =0.2A, V <sub>GS</sub> =0V	-	0.7	1.3	V
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =10V, I <sub>D</sub> =0.2A		0.2		S
I <sub>S</sub>	Continuous Source Current	V <sub>G</sub> = V <sub>D</sub> =0V, Force Current	-	-	450	mA

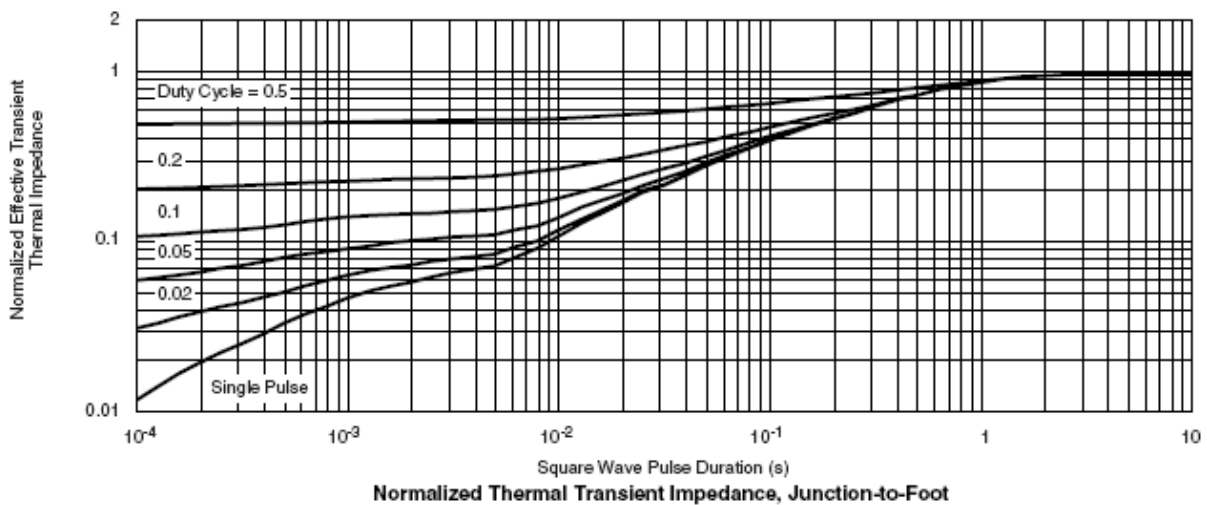
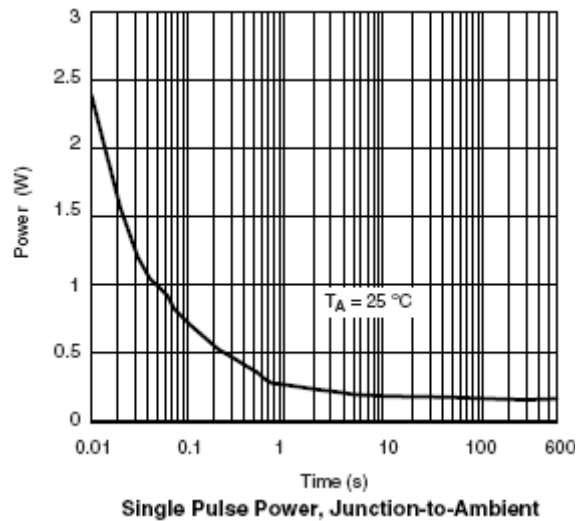
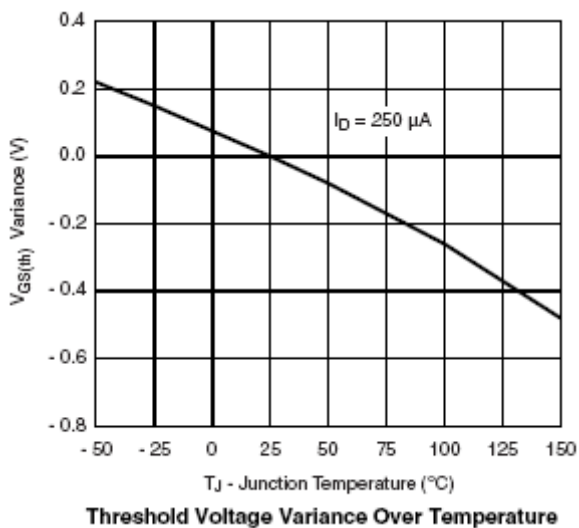
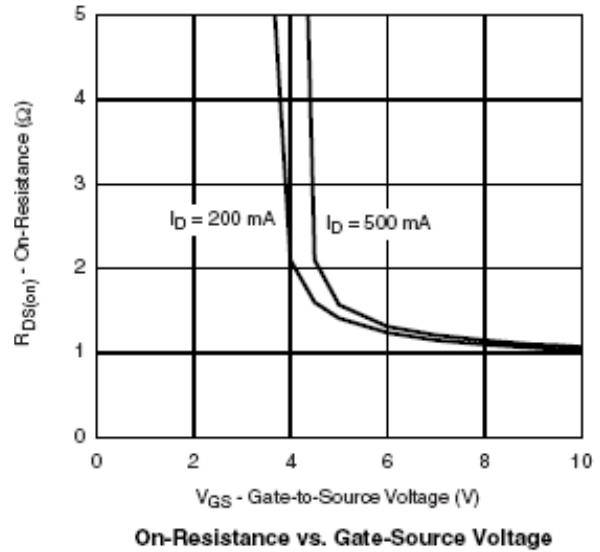
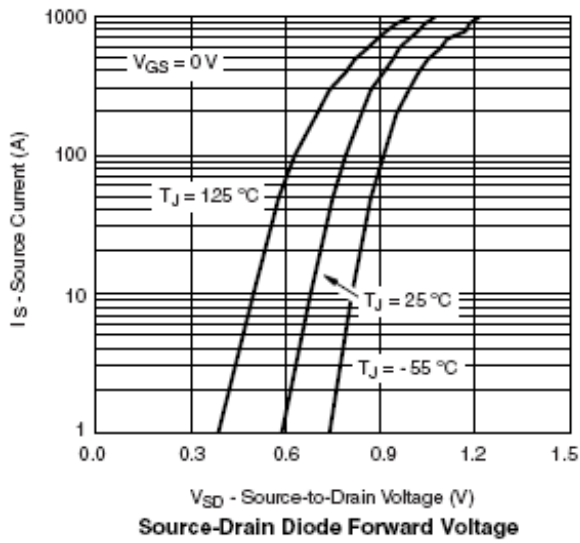
Note :

1. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%.
2. Essentially independent of operating temperature.

## Typical Performance Characteristics

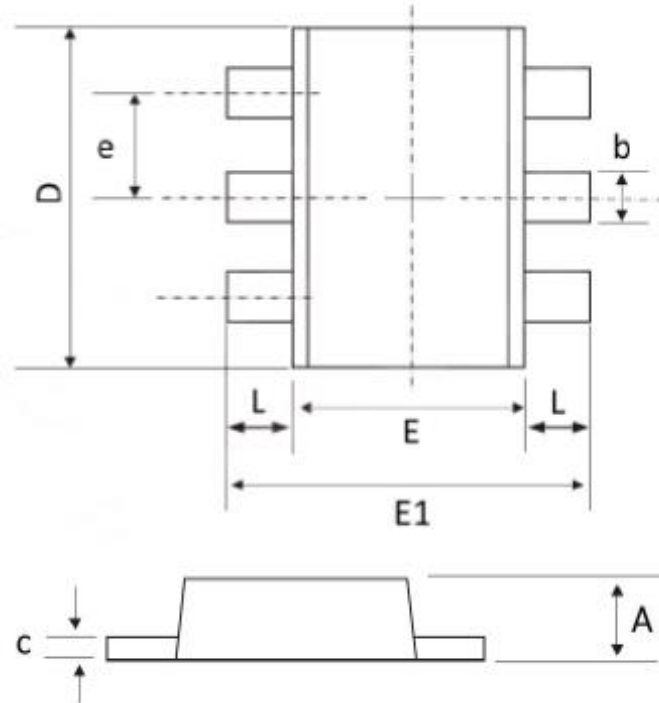


## Typical Performance Characteristics(Continue)



## Package Dimension

### SOT-563









Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
<b>A</b>	0.500	0.600	0.020	0.024
<b>b</b>	0.150	0.300	0.006	0.012
<b>c</b>	0.100	0.180	0.004	0.007
<b>D</b>	1.500	1.700	0.059	0.067
<b>E</b>	1.100	1.250	0.043	0.049
<b>E1</b>	1.550	1.700	0.061	0.067
<b>e</b>	0.5(BSC)		0.02(BSC)	
<b>L</b>	0.100	0.300	0.004	0.012

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