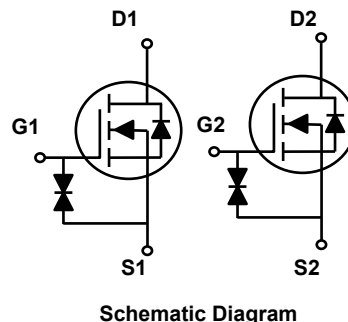
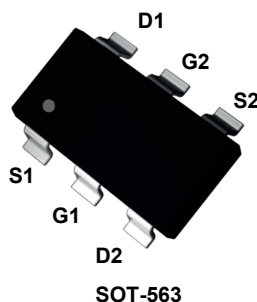


Main Product Characteristics

BV_{DSS}	60V
$R_{DS(ON)}$	3.0Ω (Max.)
I_D	0.34A



Features and Benefits

- Advanced MOSFET process technology
- Ideal for high efficiency switched mode power supplies
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery

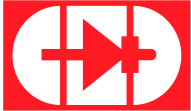


Description

The GSFJ7002K utilizes the latest techniques to achieve high cell density and low on-resistance. These features make this device extremely efficient and reliable for use in high efficiency switch mode power supplies and a wide variety of other applications.

Absolute Maximum Ratings ($T_A=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous ¹	I_D	0.34	A
Drain Current-Continuous (70°C) ¹		0.28	
Pulsed Drain Current ¹	I_{DM}	1.36	A
Maximum Power Dissipation	P_D	0.38	W
Thermal Resistance, Junction-to-Ambient ²	$R_{\theta JA}$	350	°C/W
Operating Junction and Storage Temperature Range	T_J/T_{STG}	-55 To +150	°C


Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
On / Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 5V, V_{DS}=0V$	-	-	100	nA
		$V_{GS}=\pm 10V, V_{DS}=0V$	-	-	150	nA
		$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	10	μA
Gate-Source Breakdown Voltage	BV_{GSO}	$V_{DS}=0V, I_G=\pm 250\mu A$	± 20	-	-	V
Gate Threshold Voltage ³	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.9	-	2.5	V
Drain-Source On-State Resistance ³	$R_{DS(ON)}$	$V_{GS}=10V, I_D=0.5A$	-	-	3	Ω
		$V_{GS}=5V, I_D=0.05A$	-	-	3.5	
Forward Transconductance ³	g_{fs}	$V_{DS}=10V, I_D=0.2A$	0.08	-	-	S
Dynamic and Switching Characteristics						
Input Capacitance ⁴	C_{iss}	$V_{DS}=25V, V_{GS}=0V,$ $F=1.0MHz$	-	30	-	μF
Output Capacitance ⁴	C_{oss}		-	6	-	
Reverse Transfer Capacitance ⁴	C_{rss}		-	3	-	
Turn-on Delay Time ⁴	$t_{d(on)}$	$V_{DD}=30V, V_{GS}=10V,$ $R_{GEN}=6\Omega, I_D=0.3A$	-	4.0	-	nS
Rise Time ⁴	t_r		-	2.7	-	
Turn-Off Delay Time ⁴	$t_{d(off)}$		-	9.4	-	
Fall Time ⁴	t_f		-	33	-	
Total Gate Charge ⁴	Q_g	$V_{DS}=10V, I_D=0.3A,$ $V_{GS}=10V$	-	1.6	-	nC
Gate to Source Charge ⁴	Q_{gs}		-	0.3	-	
Gate to Drain Charge ⁴	Q_{gd}		-	0.45	-	
Source-Drain Ratings and Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS}=0V, I_S=0.2A$	-	-	1.3	V
Reverse Recovery Time	T_{rr}	$I_F=0.5A, dI/dt=100A/\mu s,$ $V_R=10V$	-	8.2	-	nS
Reverse Recovery Charge	Q_{rr}		-	3.2	-	nC

Notes:

1. Repetitive rating: Pulse width limited by maximum junction temperature.
2. Surface mounted on FR4 board, $t \leq 10$ sec.
3. Pulse test: Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristic Curves

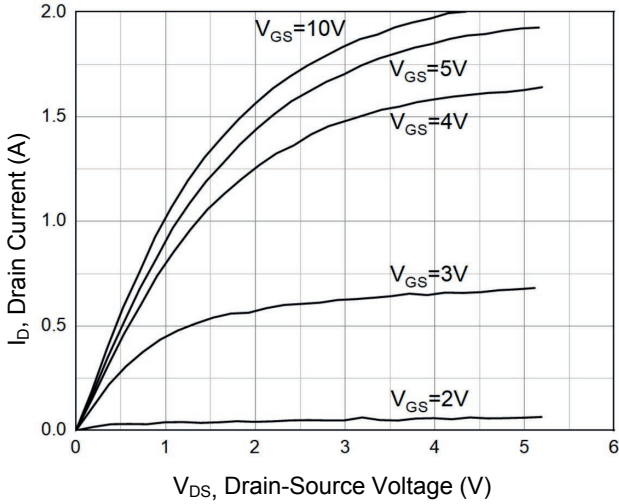


Figure 1. Output Characteristics

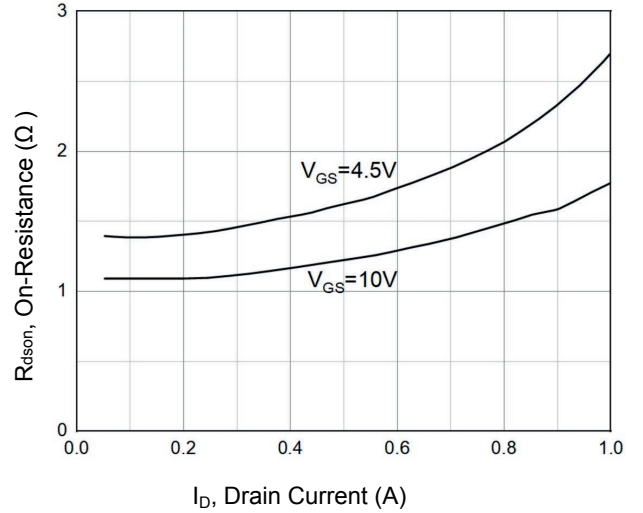


Figure 2. Drain-Source On-Resistance

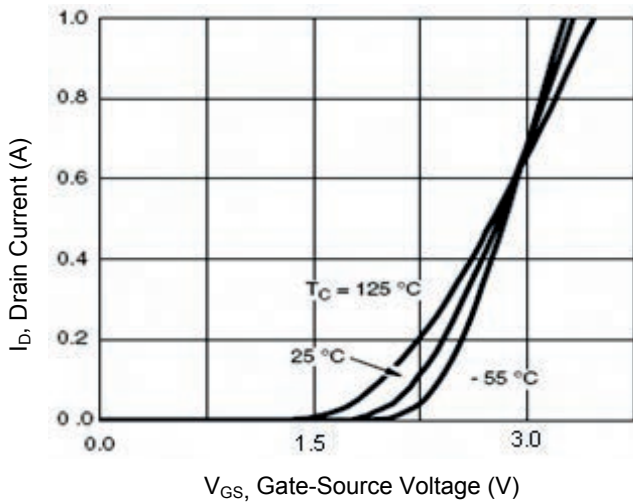


Figure 3. Transfer Characteristics

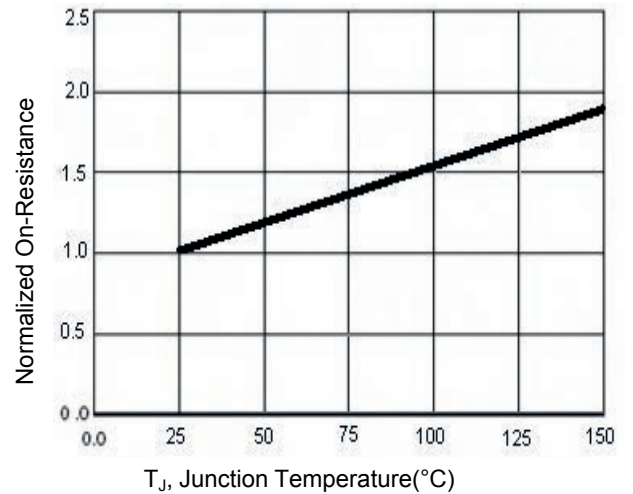


Figure 4. Drain-Source On-Resistance

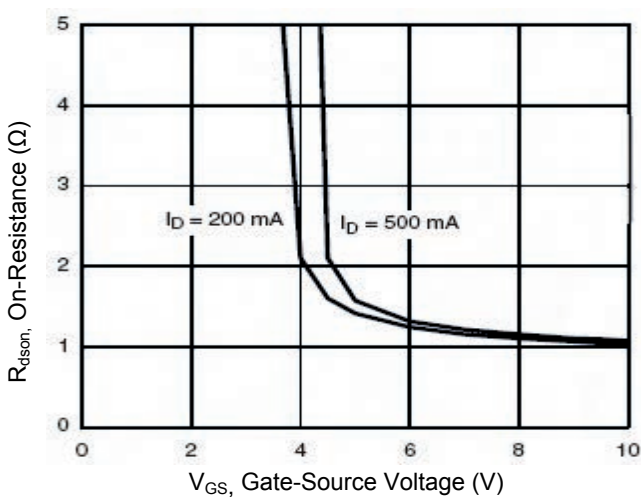


Figure 5. $R_{ds(on)}$ vs. V_{GS}

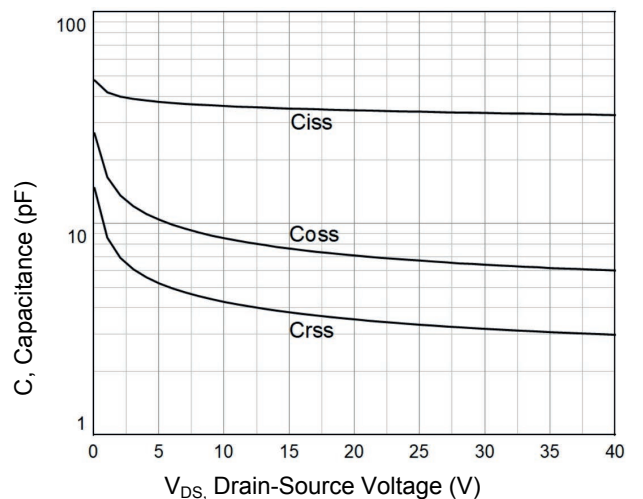


Figure 6. Capacitance vs. V_{DS}

Typical Electrical and Thermal Characteristic Curves

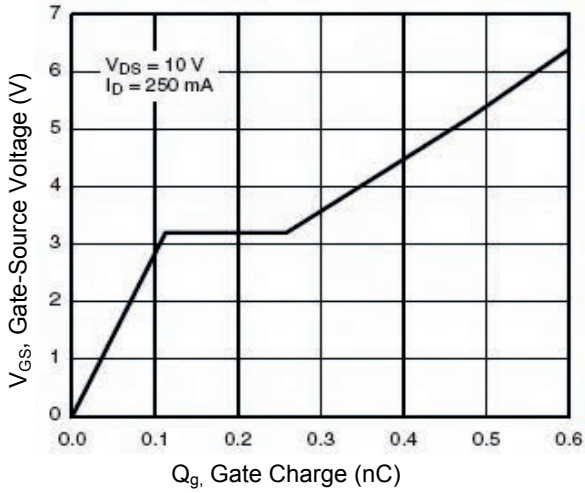


Figure 7. Gate Charge

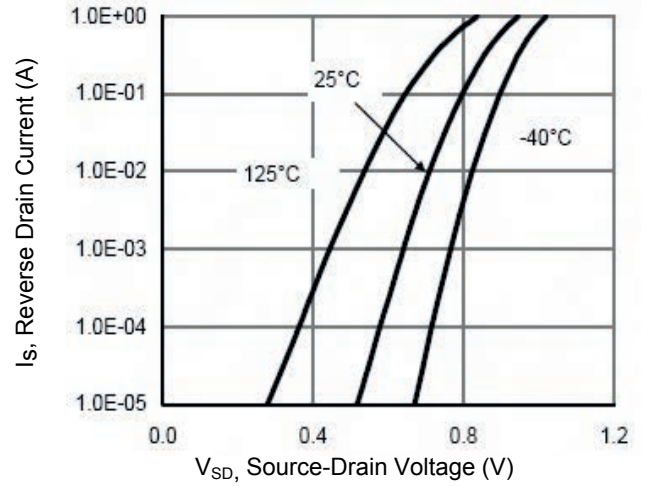
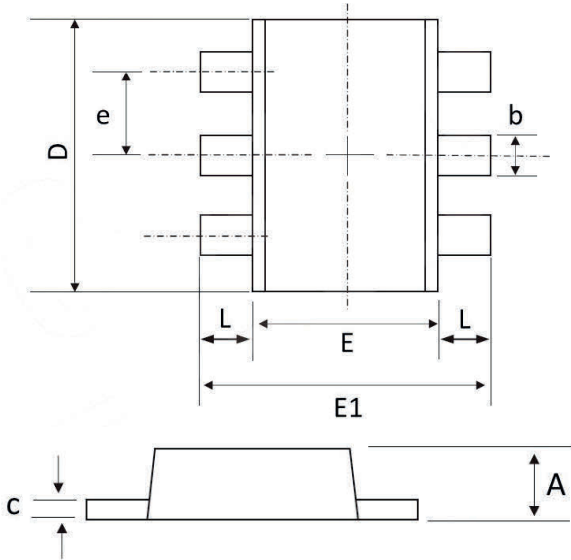


Figure 8. Source- Drain Diode Forward Voltage

Package Outline Dimensions (SOT-563)



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

Order Information

Device	Package	Marking	Packaging	SPQ
GSFJ7002K	SOT-563	72J	Tape & Reel	3,000pcs / Reel