★ Green Device Available
★ Super Low Gate Charge
★ Excellent Cdv/dt effect decline
★ Advanced high cell density Trench technology

Product Summary

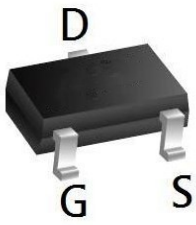
BVDSS	RDSON	ID
60V	1.9Ω	320mA

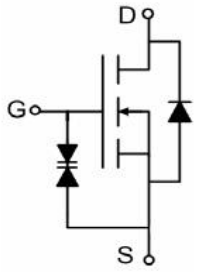
Description

The CP7002 is the high cell density trenched N-chMOSFETs, which provides excell ent RDSON andefficiency for most of the small power switching andload switch applications

The CP7002 meet the RoHS and Green Productrequirement with full function reliability approved.

SOT23 Pin Configuration





Absolute Maximum Ratings (T_A=25℃ unless otherwise specified)

Symbol	Parameter		Max.	Units
V_{DSS}	Drain-Source Voltage		60	V
V_{GSS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current	T_A= 25℃	0.3	A
		T_A= 100℃	0.2	
I_{DM}	Pulsed Drain Current note1		2	A
P_D	Power Dissipation	T_A= 25℃	0.35	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		357	℃/W
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +150	℃

Electrical Characteristics (T_J=25℃ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D= 250μA	60	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} =60V, V_{GS} = 0V,	-	-	1	μA
I_{GSS}	Gate to Body Leakage Current	V_{DS} =0V, V_{GS} = ±20V	-	-	±10	uA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}, I_D= 250μA	1	1.5	2.5	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note2	V_{GS} =10V, I_D =0.5A	-	1.9	2.7	Ω
		V_{GS} =4.5V, I_D =0.2A	-	2.2	3.2	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} = 25V, V_{GS} = 0V, f = 1.0MHz	-	-	35	pF
C_{oss}	Output Capacitance		-	-	12	pF
C_{rss}	Reverse Transfer Capacitance		-	-	7	pF
Q_g	Total Gate Charge	V_{DS} = 15V, I_D = 0.2A, V_{GS} = 5V	-	-	0.8	nC
Q_{gs}	Gate-Source Charge		-	0.3	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	0.6	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=30V, R_L=150Ω, I_D=200mA , V_{GEN}=10V, R_G=10Ω	-	6	-	ns
t_r	Turn-on Rise Time		-	-	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	13	-	ns
t_f	Turn-off Fall Time		-	-	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	0.3	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	-	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS} = 0V, I_S =0.2A	-	-	1.1	V

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

Typical Performance Characteristics

FIG. 1-Output Characteristics

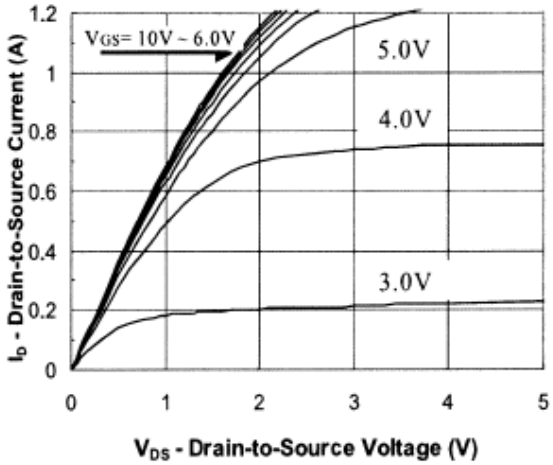


FIG. 2-Breakdown Voltage VS. Junction Temperature

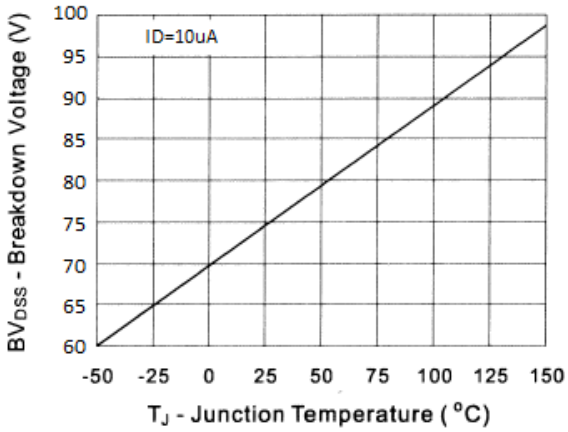


FIG. 3-On-Resistance VS. Drain Current

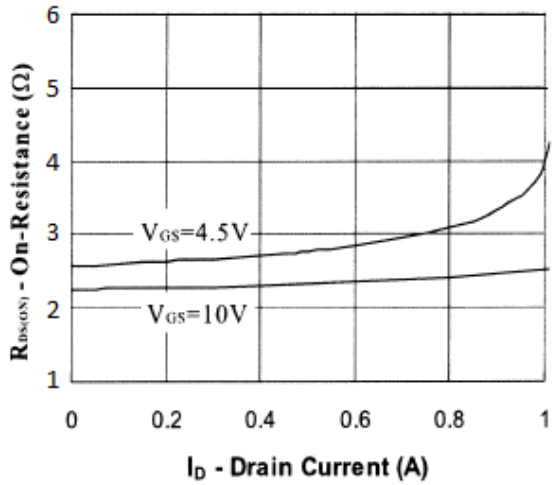


FIG. 4-On-Resistance VS. Gate-Source voltage

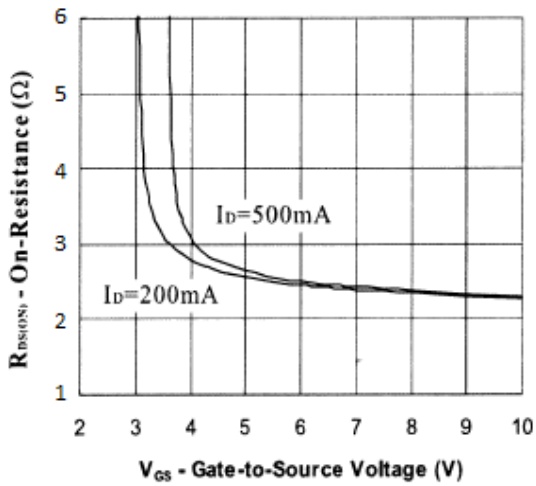


FIG. 5-On-Resistance VS. Junction Temperature

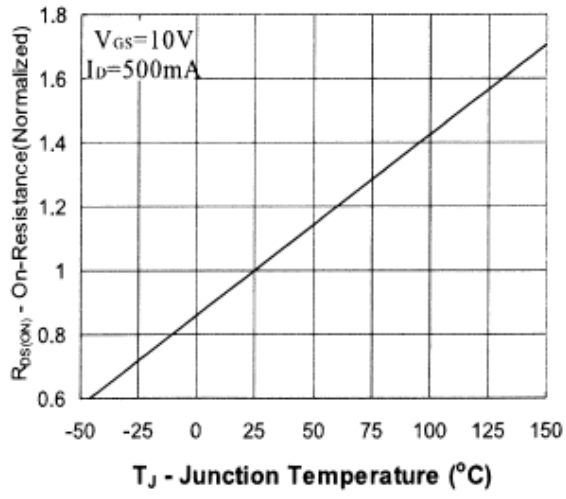


FIG. 6-Gate Charge Waveform

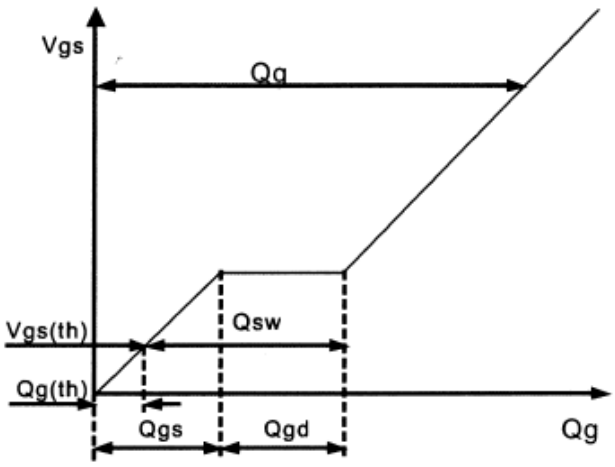


FIG. 7-Gate Charge

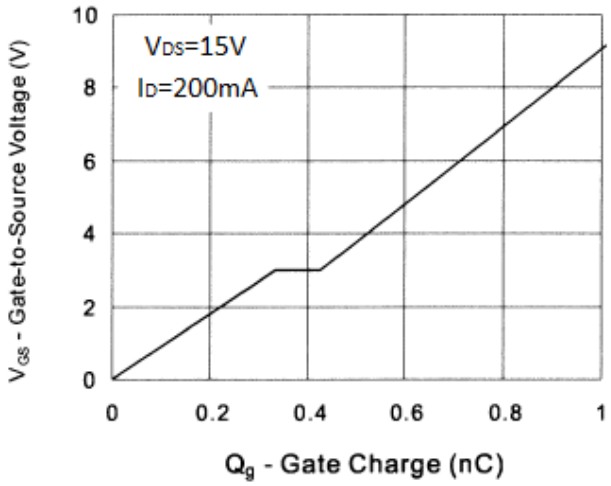


FIG. 8-Threshold Voltage VS. Temperature

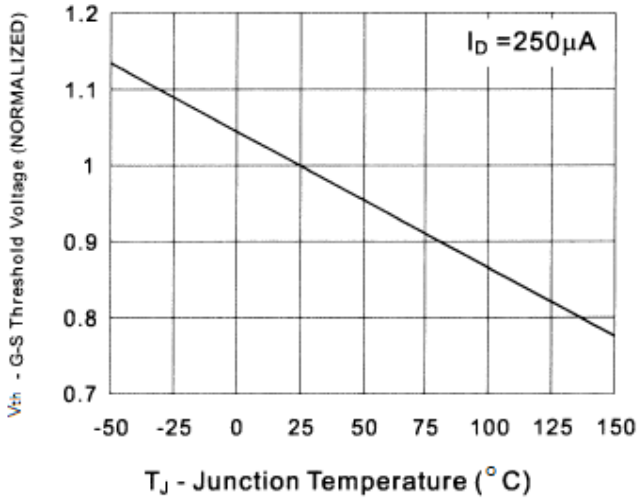


FIG. 9-Capacitance VS. Drain to Source Voltage

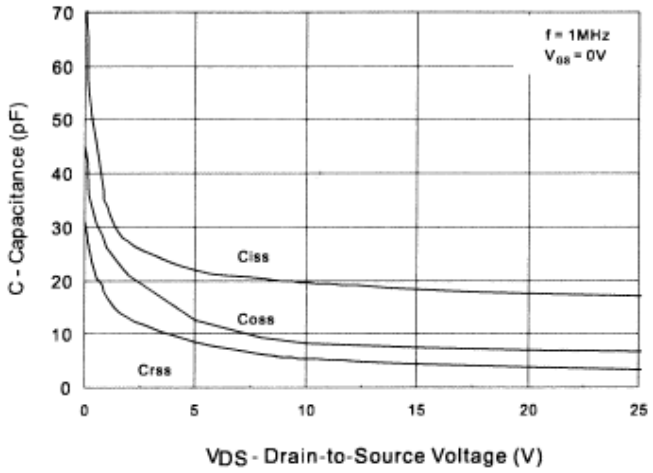


FIG. 10-Source-Drain Diode Forward Voltage

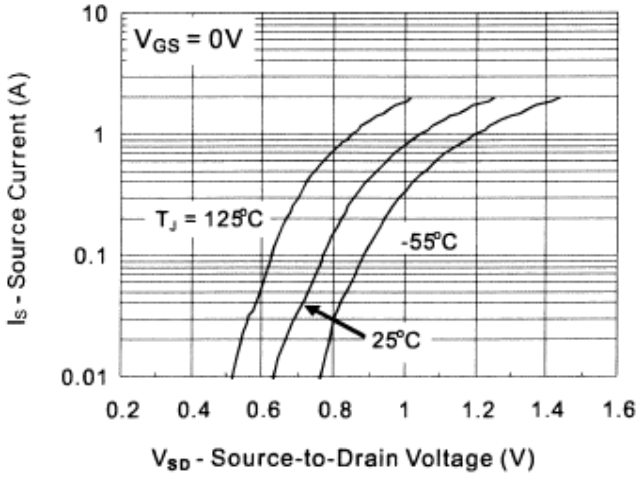
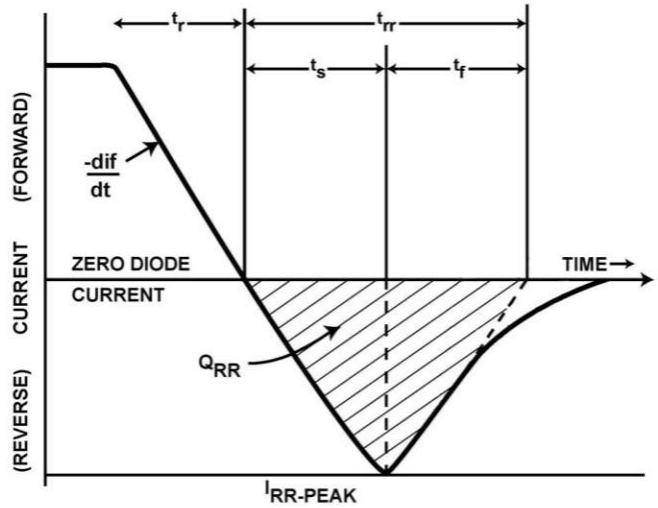
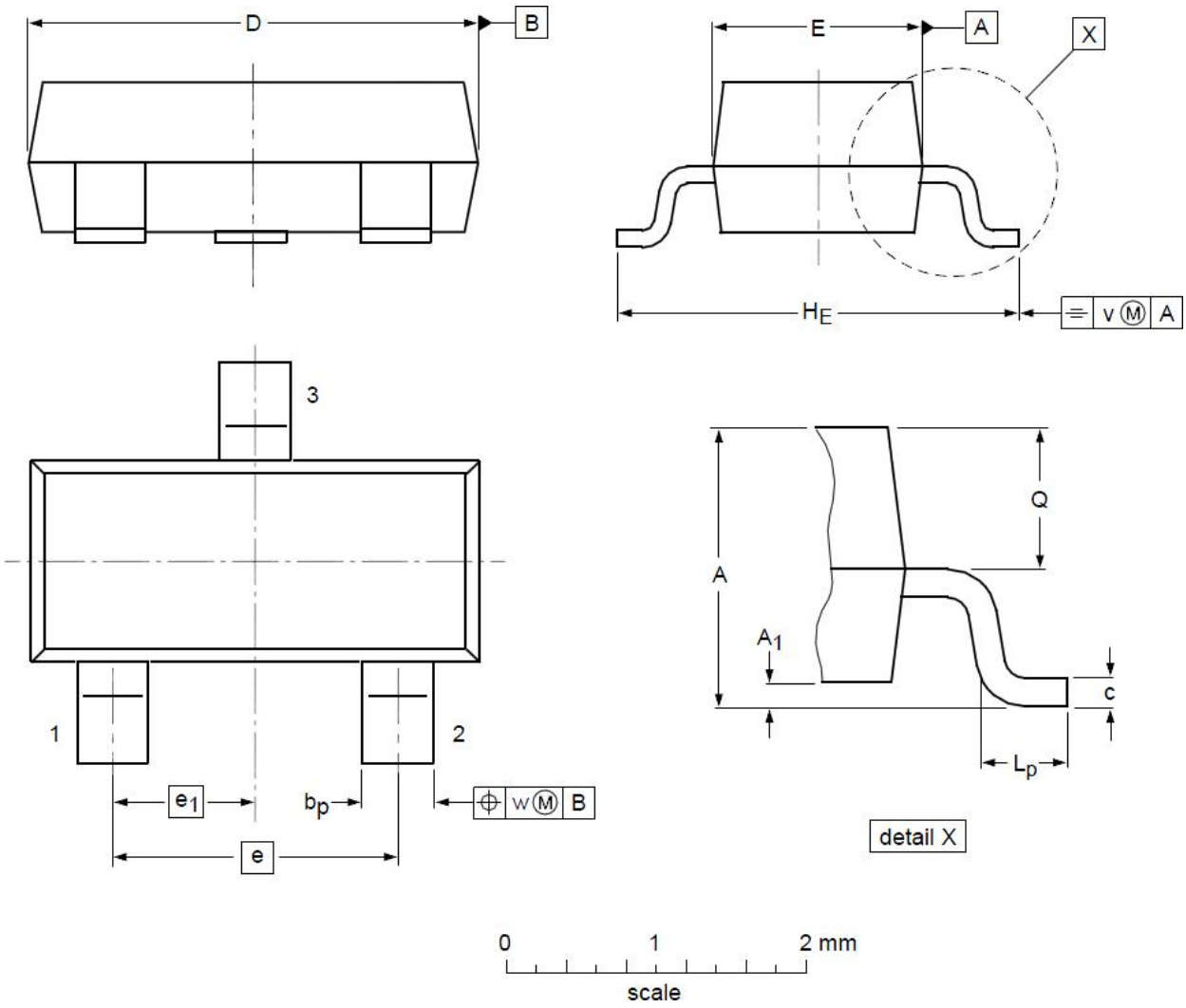


FIG. 11-QRR and TRR Waveform definitions



SOT23 Mechanical Data



DIMENSIONS (unit : mm)

Symbol	Min	Typ	Max	Symbol	Min	Typ	Max
A	0.90	1.01	1.15	**A_1**	0.01	0.05	0.10
b_p	0.30	0.42	0.50	**c**	0.08	0.13	0.15
D	2.80	2.92	3.00	**E**	1.20	1.33	1.40
e	--	1.90	--	**e_1**	--	0.95	--
H_E	2.25	2.40	2.55	**L_p**	0.30	0.42	0.50
Q	0.45	0.49	0.55	**v**	--	0.20	--
w	--	0.10	--				