

2N7002KCW



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Electrical Characteristics ($T_J=25$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$			1	
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=20V, V_{DS}=0V$			10	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250$	1	1.5	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=300mA$		1.9	2.5	
		$V_{GS}=4.5V, I_D=200mA$		2.0	3.0	
Diode Forward Voltage	V_{SD}	$I_S=300mA, V_{GS}=0V$			1.2	V
Maximum Body-Diode Continuous Current	I_S				300	mA
Dynamic Parameters						
Input Capacitance	C_{iss}	$V_{DS}=30V, V_{GS}=0V, f=1MHz$		27		pF
Output Capacitance	C_{oss}			3		
Reverse Transfer Capacitance	C_{rss}			2		
Switching Parameters						
Total Gate Charge	Q_g	$V_{GS}=10V, V_{DS}=30V, I_D=0.3A$		1.65	2.4	nC
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DD}=30V, I_D=300mA, R_{GEN}=6$		6.5		ns
Turn-off Delay Time	$t_{D(off)}$			9.6		
Reverse recovery Time	t_{rr}	$V_{GS}=0V, I_S=300mA, V_R=25V, di/dt=-100A/s$		24		ns

A. Pulse Test: Pulse Width 300us, Duty cycle 2%.

B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.



Typical Performance Characteristics

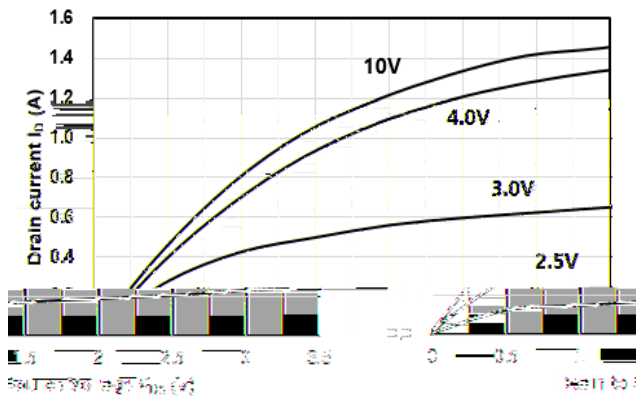


Figure1. Output Characteristics

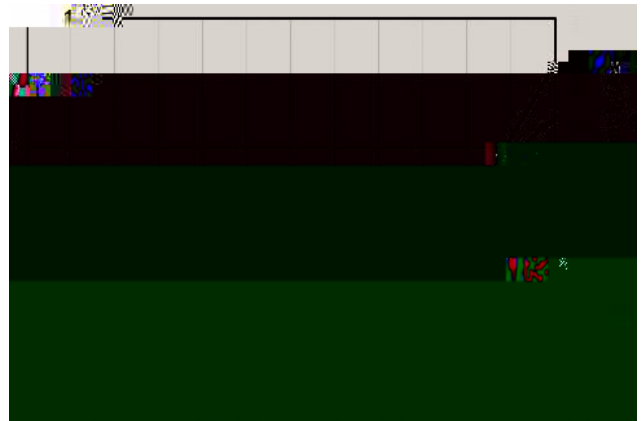


Figure2. Transfer Characteristics

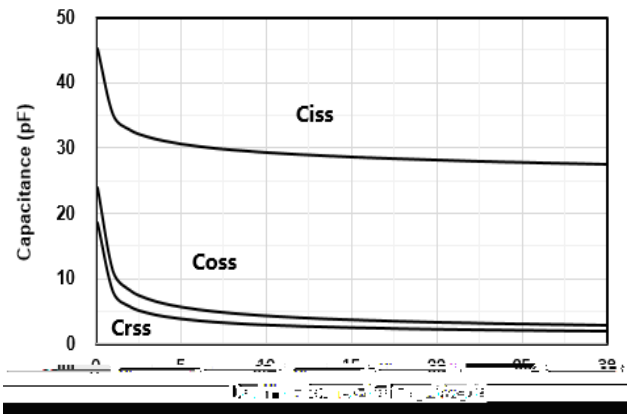


Figure3. Capacitance Characteristics

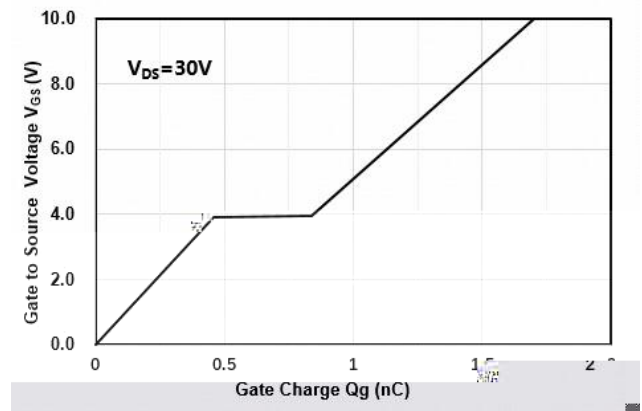


Figure4. Gate Charge

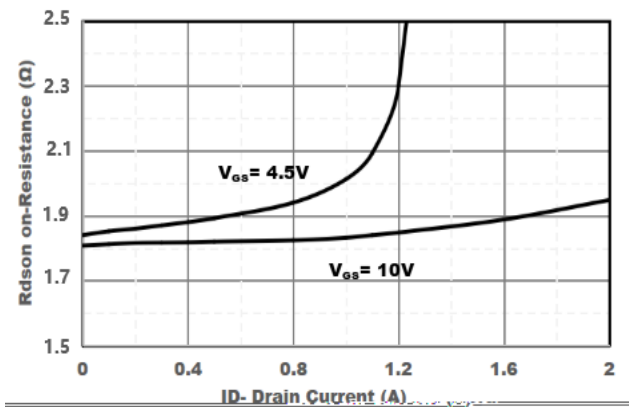


Figure5. Drain-Source on Resistance

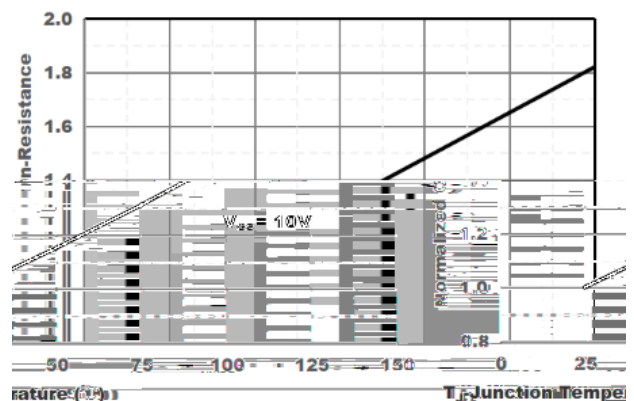


Figure6. Drain-Source on Resistance



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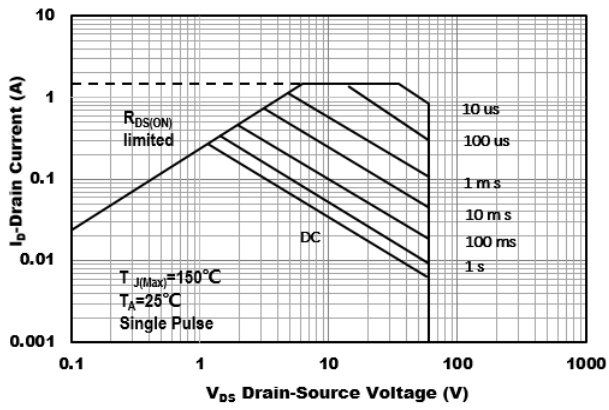


Figure7. Safe Operation Area

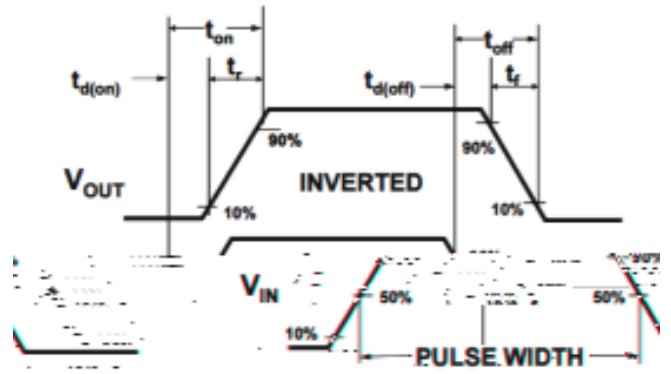


Figure8. Switching wave



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SOT-323 Package information

SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.016	0.150	0.400
c	0.004	0.010	0.100	0.250
D	0.071	0.071	1.800	2.200
E				
E1	0.085	0.096	2.150	2.450

NOTE:

1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.

2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.

3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



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