



2N7002KCL3

■ Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	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} = ±20V, V _{DS} =0V			±10	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	1	1.5	2.5	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D =260mA		1.9	2.5	Ω
		V _{GS} = 4.5V, I _D =200mA		2.0	3.0	
Diode Forward Voltage	V _{SD}	I _S =260mA, V _{GS} =0V		0.9	1.2	V
Maximum Body-Diode Continuous Current	I _S				260	mA
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =0.26A		0.13		S
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, f=1MHZ		21		pF
Output Capacitance	C _{oss}			9		
Reverse Transfer Capacitance	C _{rss}			4		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =30V, I _D =0.26A		1.22		nC
Gate-Source Charge	Q _{gs}			0.5		
Gate-Drain Charge	Q _{gd}			0.18		
Reverse Recovery Charge	Q _{rr}	V _{GS} =0V, I _S =260mA, V _R =25V, di/dt=100A/μs		3.6		
Reverse Recovery Time	t _{rr}			16		
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =50V, I _D =260mA, R _{GEN} =50Ω		7		ns
Turn-on Rise Time	t _r			19		
Turn-off Delay Time	t _{D(off)}			20		
Turn-off fall Time	t _f			84		

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

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



Typical Performance Characteristics

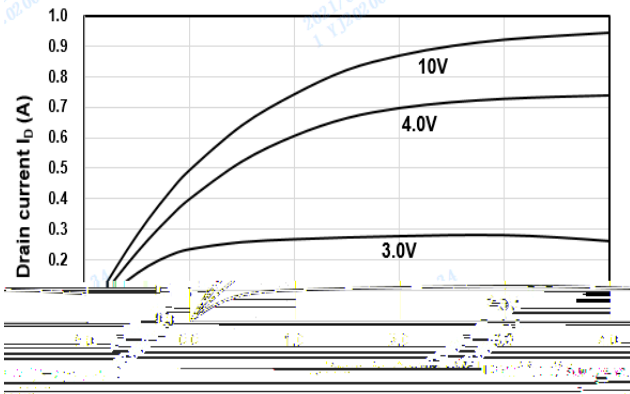


Figure1. Output Characteristics

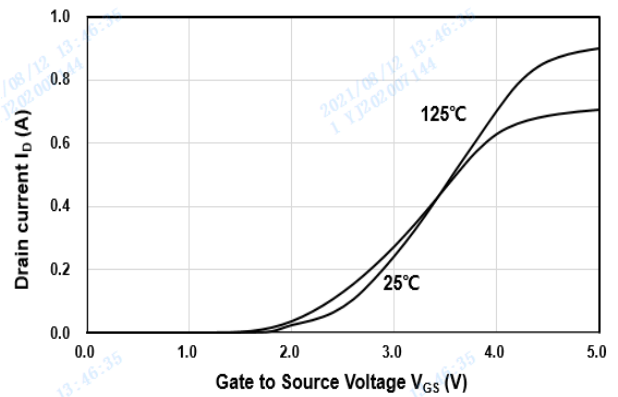


Figure2. Transfer Characteristics

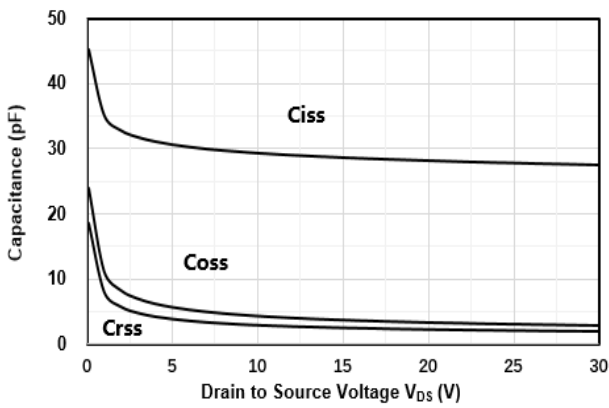


Figure3. Capacitance Characteristics

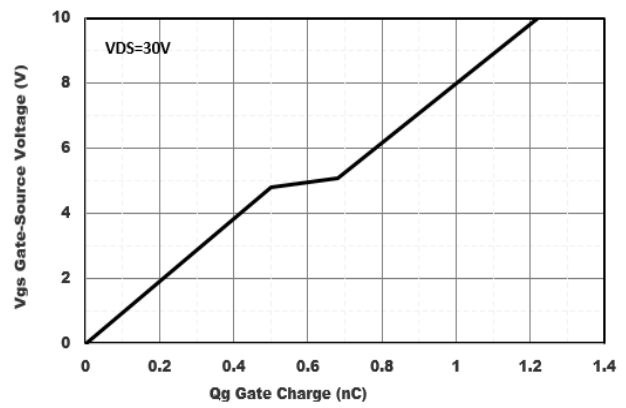


Figure4. Gate Charge

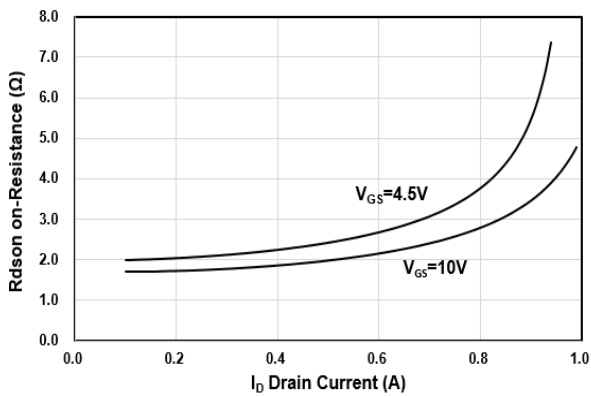


Figure5. Drain-Source on Resistance

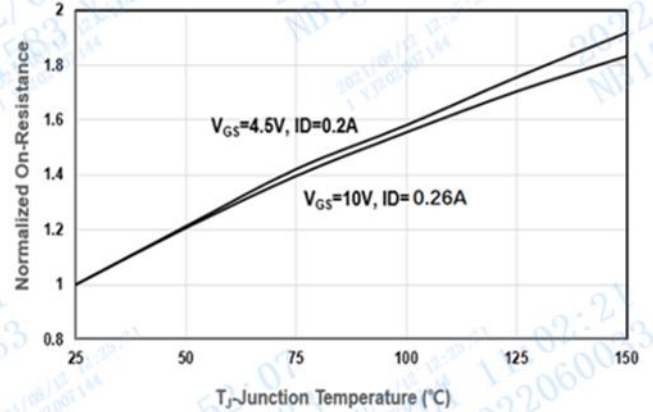


Figure6. Drain-Source on Resistance



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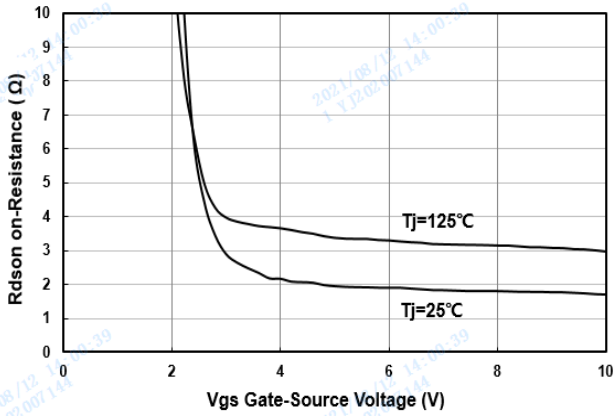


Figure7. On-Resistance vs V_{GS}

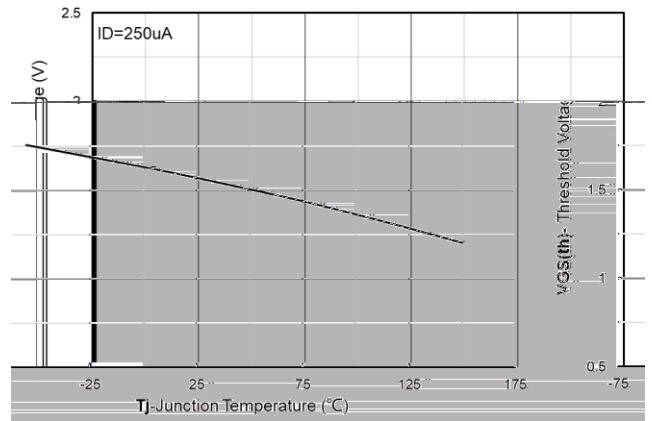


Figure8. Threshold Voltage vs Temperature

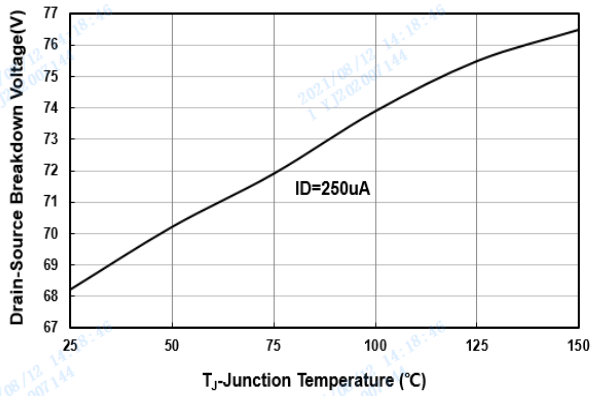


Figure9. Breakdown Voltage vs Temperature

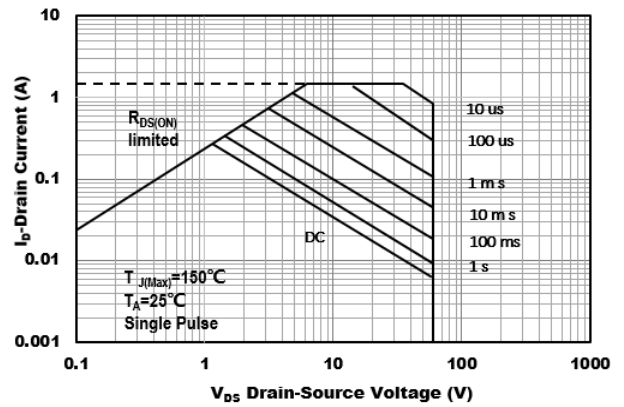


Figure10. Safe Operation Area

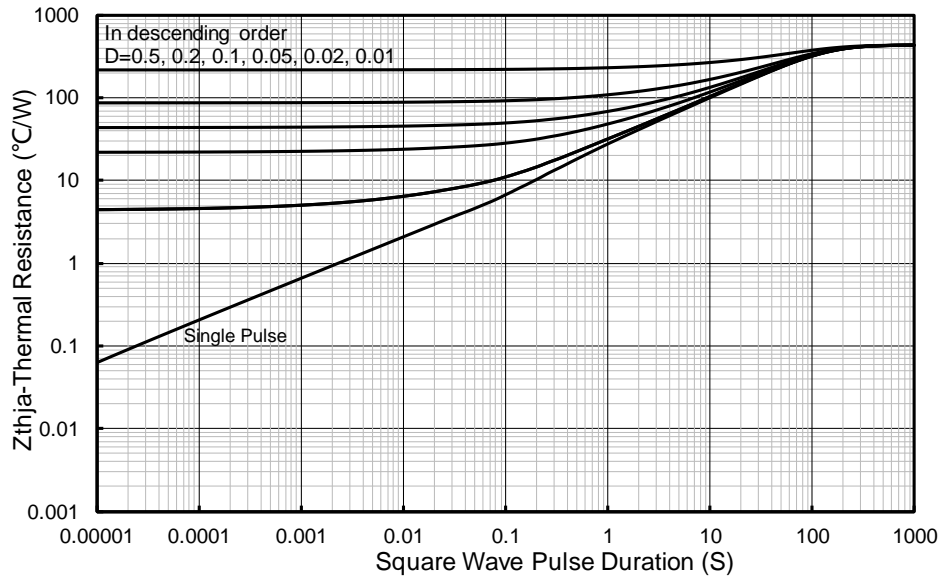
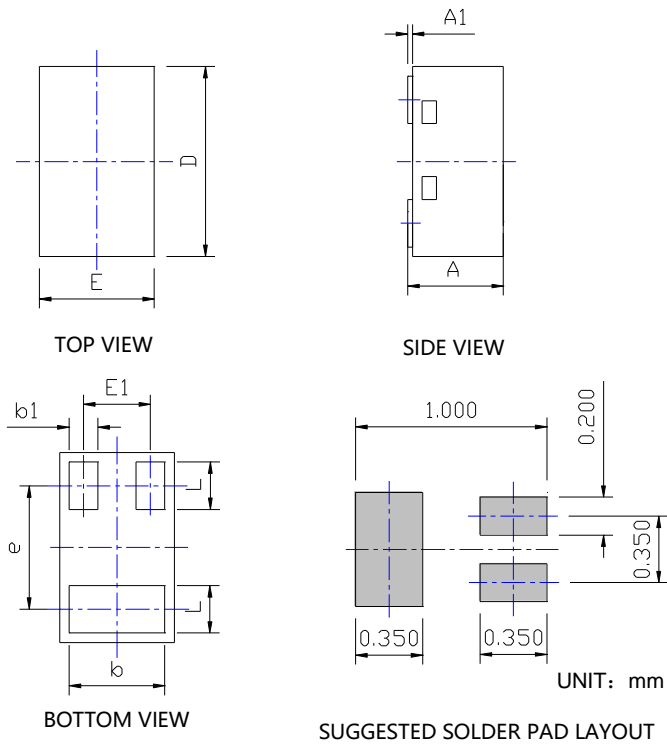


Figure11. Maximum Transient Thermal Impedance

■ DFN1006-3L Package information



SYMBOL	DIMENSIONS		
	Millimeter		
	MIN.	NOM.	MAX.
A	0.42	---	0.55
A1	0.025REF		
b	0.45	0.50	0.55
b1	0.10	0.15	0.20
D	0.95	1.00	1.05
E	0.55	0.60	0.65
E1	0.35BSC		
e	0.65BSC		
L	0.20	0.25	0.30

NOTE:
 1. PACKAGE BODY SIZES EXCLUDE LEAD BURRS.
 2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
 3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



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