

BR2N7002AK2

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Rev.D Oct.-2023



DATA SHEET

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain-Gate Voltage	V_{DGR}	60	V
Drain Current - Continuous	I_D $T_a=25$	300	mA
	I_D $T_a=85$	210	
Drain Current - Pulsed(Note 1)	I_{DM}	1200	mA
Gate-Source Voltage - Continuous	V_{GSS}	± 20	V
Power Dissipation	P_D	350	mW
Junction Temperature Range	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	
Maximum Junction-to-Ambient(Note 2)	$R_{JA}(\text{Steady State})$	300	/W
	$R_{JA}(t \ 5s)$	92	

Note 1) Pulse Width 10us, Duty Cycle 1%

Note 2) Surface-mounted on FR4 board using 1 sq in pad size with 1 oz Cu

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	$V_{GS}=0$ $I_D=250\mu A$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0$ $V_{DS}=60V$			1.0	μA
Gate-Source Leakage current	I_{GSS}	$V_{DS}=0V$ $V_{GS}=\pm 20V$			± 10	μA
Static Drain-Source On-Resistance	$R_{DS(on)(1)}$	$V_{GS}=10V$ $I_D=0.5A$			2.3	
	$R_{DS(on)(2)}$	$V_{GS}=5V$ $I_D=0.05A$		1.7	2.7	
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=250mA$			1.5	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0	1.5	2.5	V
Forward Transconductance	Y_{fs}	$V_{DS}=10V$ $I_D=0.2A$	80			mS
Input Capacitance	C_{iss}	$V_{GS}=0V$, $f=1MHz$, $V_{DS}=20V$			50	pF

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn On Delay Time	$t_{d(ON)}$	$V_{GS}=10V, V_{DD}=25V,$ $I_D=500mA, R_G=25$		35		ns
Rise Time	t_r			75		
Turn Off Delay Time	$t_{d(OFF)}$			305		
Fall Time	t_f			260		

/ Electrical Characteristic Curve

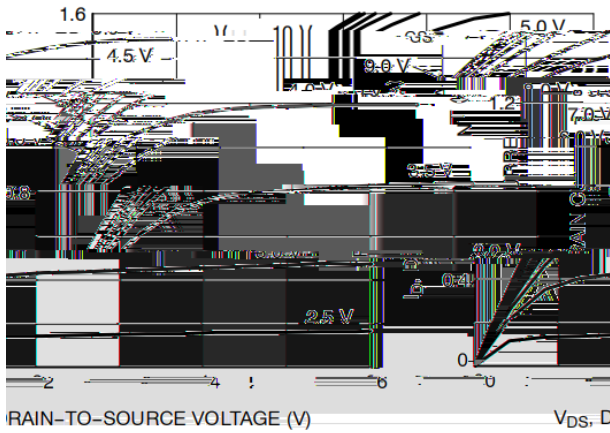


Figure 1. Drain Current vs. Drain-Source Voltage

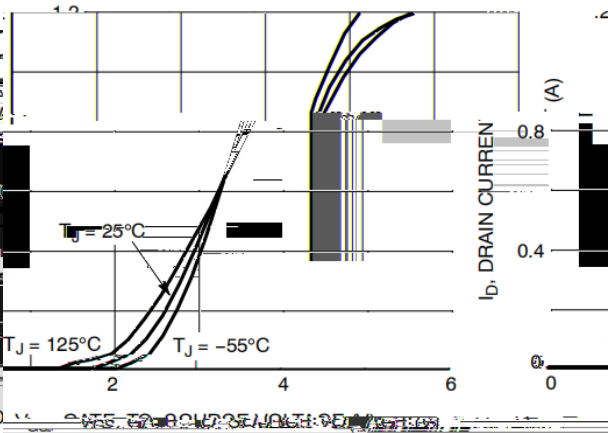


Figure 2. Transfer Characteristics

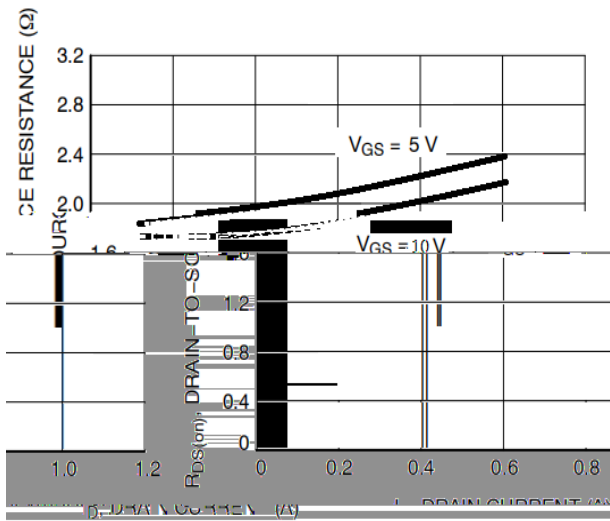


Figure 3. On-Resistance vs. Drain Current and Temperature

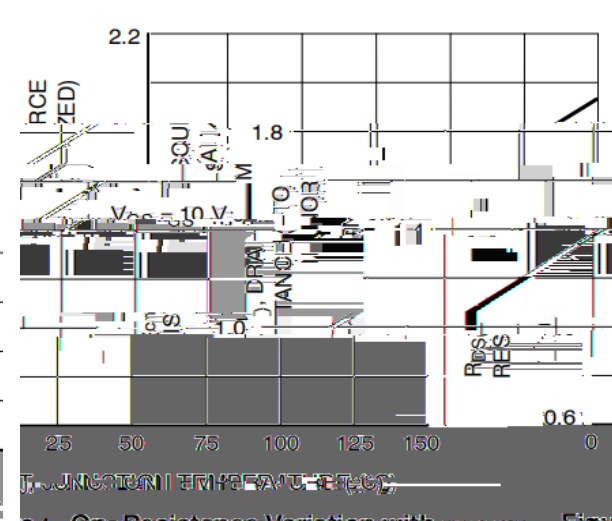


Figure 4. On-Resistance vs. Temperature

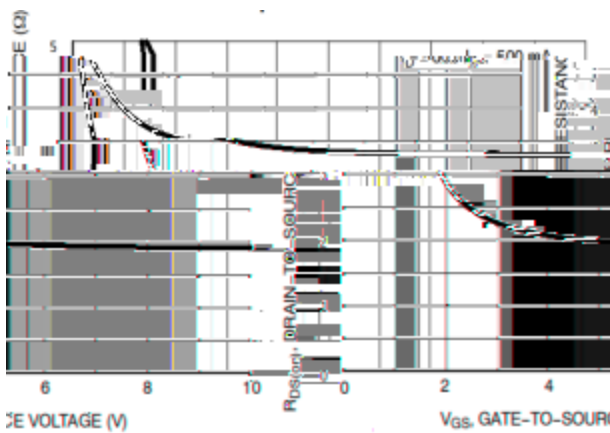


Figure 5. On-Resistance vs. Gate-to-Source Voltage

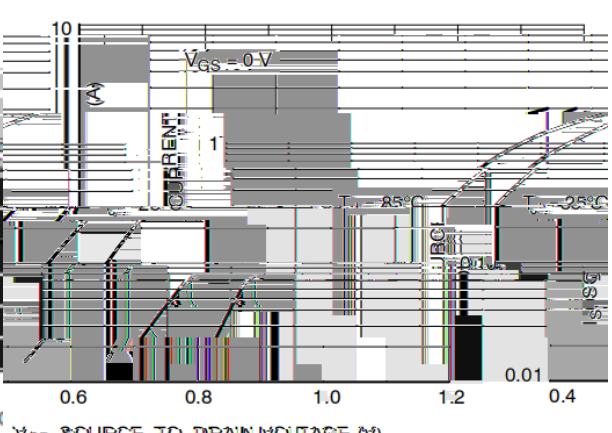
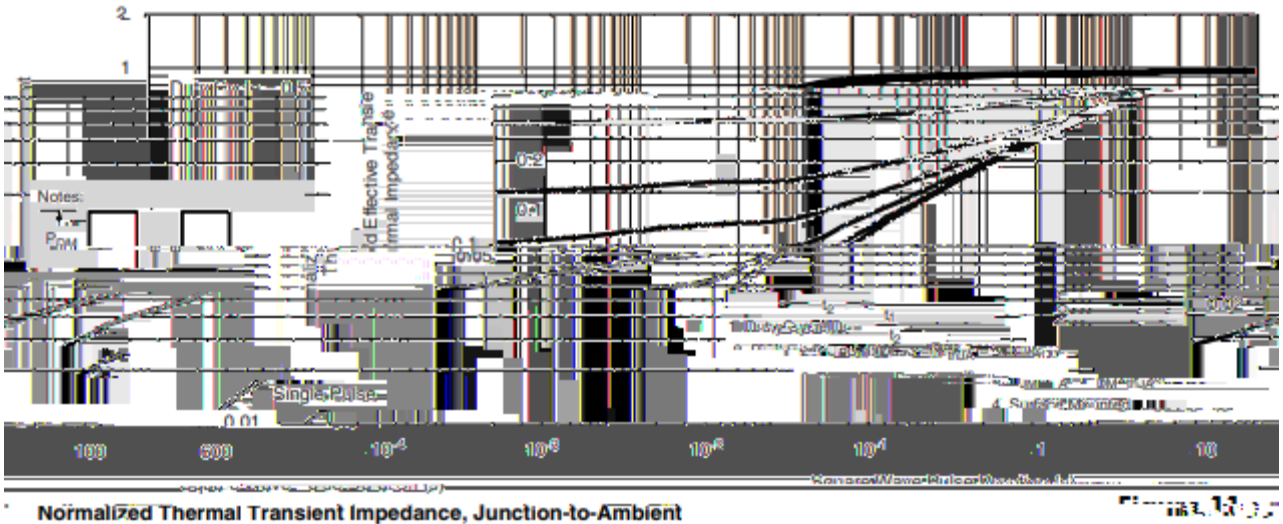
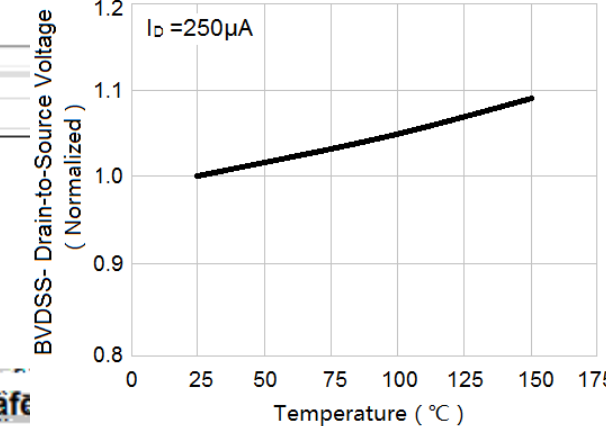
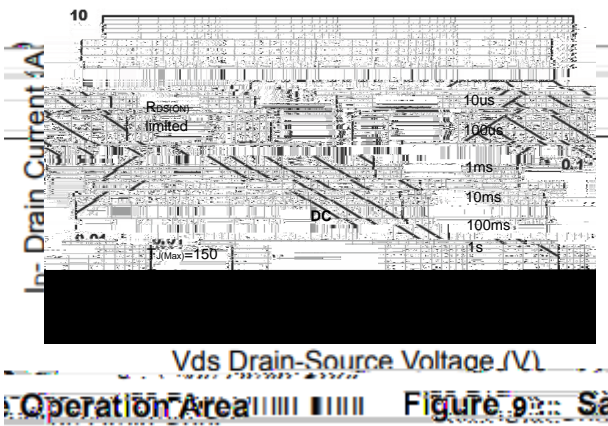
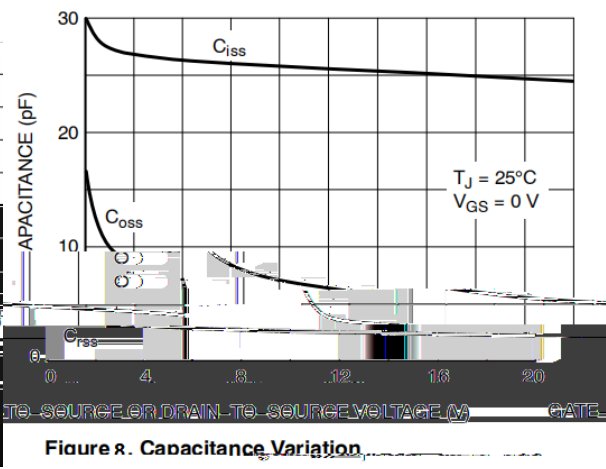
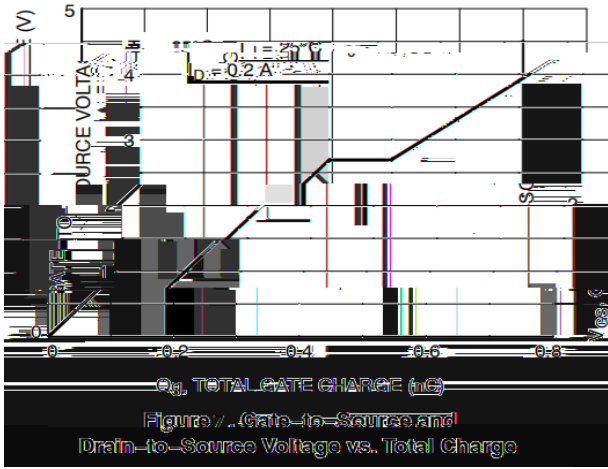


Figure 6. Diode Forward Voltage vs. Current

/ Electrical Characteristic Curve



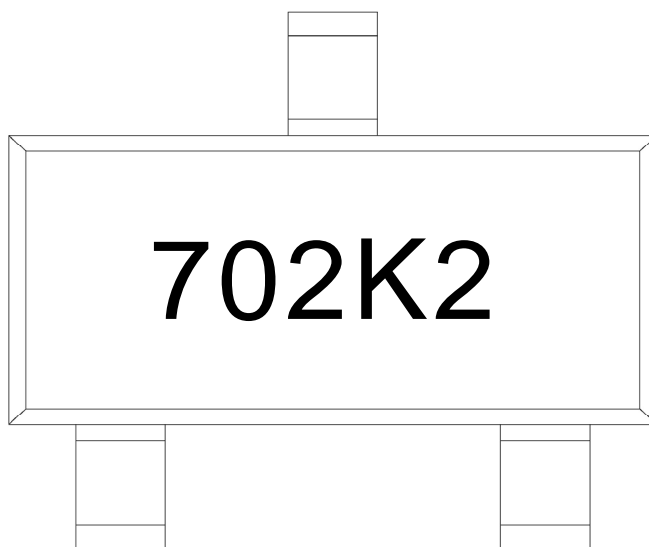
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/ Marking Instructions



702K2

Note:

702K2: Product Type Code

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