

## FEATURES

|  $R_{DS(ON)}, V_{GS}@10V, I_{DS}@500mA=3\Omega$

|  $R_{DS(ON)}, V_{GS}@4.5V, I_{DS}@200mA=4\Omega$

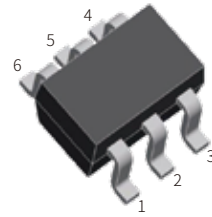
| Advanced Trench Process Technology

| High Density Cell Design For Ultra Low On-Resistance

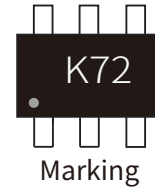
| Very Low Leakage Current In Off Condition

| Specially Designed for Battery Operated Systems,  
Solid-State Relays Drivers : Relays, Displays, Lamps,  
Solenoids, Memories, etc

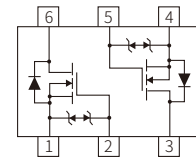
| ESD Protected 2KV HBM



SOT-363



Marking



Schematic Symbol

## APPROVALS

**RoHS** Compliance with 2011/65/EU

**HF** Compliance with IEC61249-2-21:2003

## ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Continuous Drain Current	$I_D$	115	mA
Pulsed Drain Current <sup>1)</sup>	$I_{DM}$	800	mA
Gate-source Voltage	$V_{GSS}$	$\pm 20$	V
Total Power Dissipation <sup>c</sup>	$P_D$	$T_A=25^\circ\text{C}$	200
		$T_A=75^\circ\text{C}$	120
Junction-to Ambient Thermal Resistance (PCB mounted) <sup>2)</sup>	$R_{\theta JA}$	625	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to 150	$^\circ\text{C}$

Note:1.Maximum DC current limited by the package

2.Surface mounted on FR4 board,  $t<10$  sec

3.Pulse width<300us, Duty cycle<2%

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
<b>Static Parameter</b>						
Drain-source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1		2.5	V
Drain Cut-Off Current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$			1	$\mu A$
Gate Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 10$	$\mu A$
Drain Source ON Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=500mA$			3.0	$\Omega$
		$V_{GS}=4.5V, I_D=200mA$			4.0	$\Omega$
<b>Dynamic Parameters</b>						
Input capacitance	$C_{iss}$	$V_{GS}=0V, V_{DS}=25V,$ $f=1.0MHz$			35	pF
Output capacitance	$C_{oss}$				10	pF
Reverse transfer capacitance	$C_{rss}$				5	pF
<b>Switching Parameters</b>						
Total Gate Charge	$Q_g$	$V_{DS}=15V, V_{GS}=4.5V, I_D=200mA$			0.8	nC
Turn-On Delay Time	$t_{on}$	$V_{DD}=30V, R_L=150\Omega, V_{GEN}=10V$ $I_D=200mA, R_G=10\Omega$			20	ns
Turn-Off Delay Time	$t_{off}$				40	ns
<b>Source-Drain Diode</b>						
Diode Forward Voltage	$V_{SD}$	$I_S=200mA, V_{GS}=0V$		0.82	1.3	V
Continuous Diode Forward Current	$I_S$				115	mA
Pulsed Diode Forward Current	$I_{SM}$				800	mA

# PARAMETER CHARACTERISTIC CURVE

Figure 1: Output Characteristics

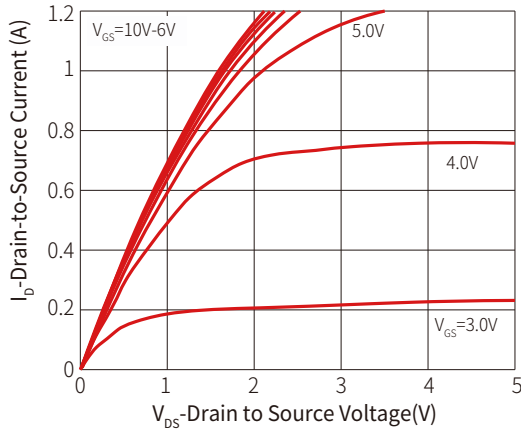


Figure 2: Transfer Characteristics

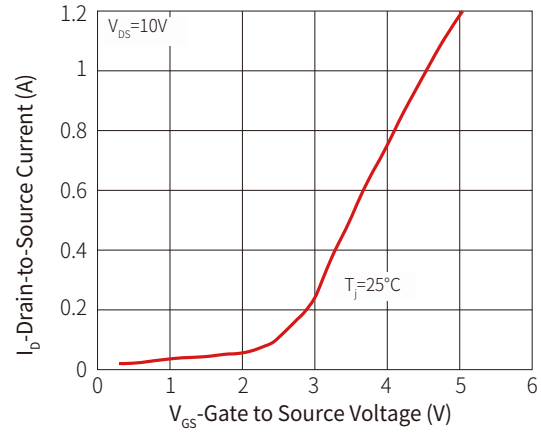


Figure 3: On-Resistance vs Drain Current

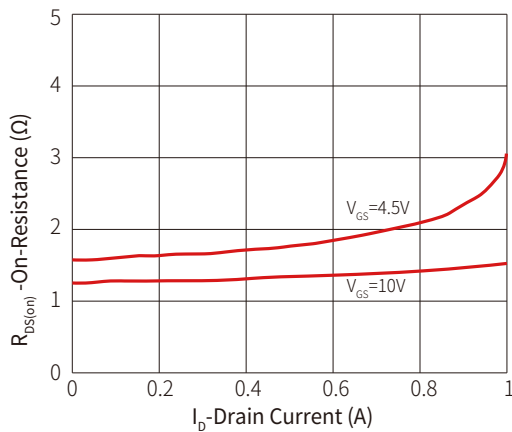


Figure 4: Resistance vs Gate to Source Voltage

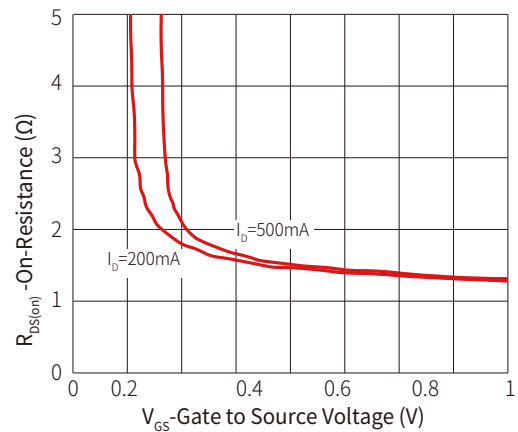


Figure 5: On-Resistance vs Junction Temperature

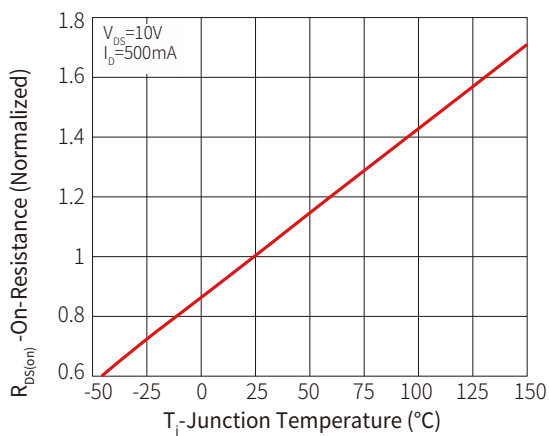
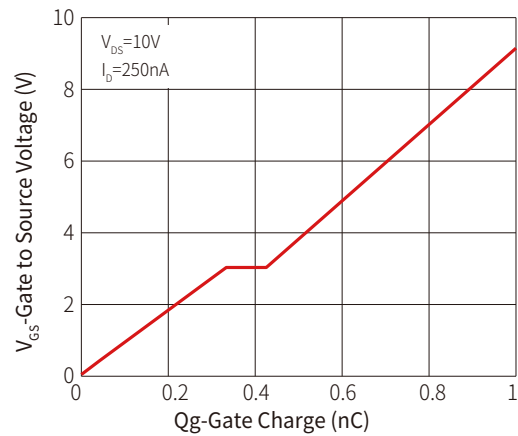
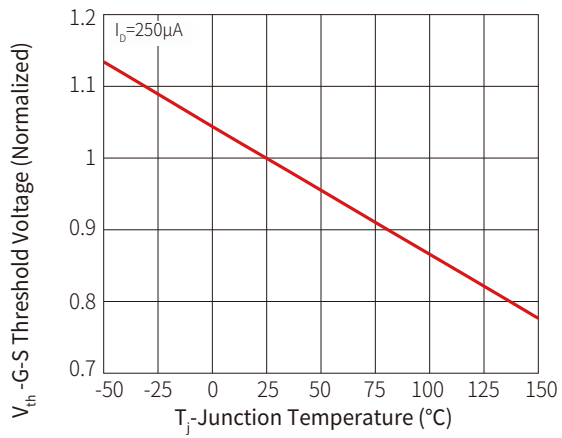
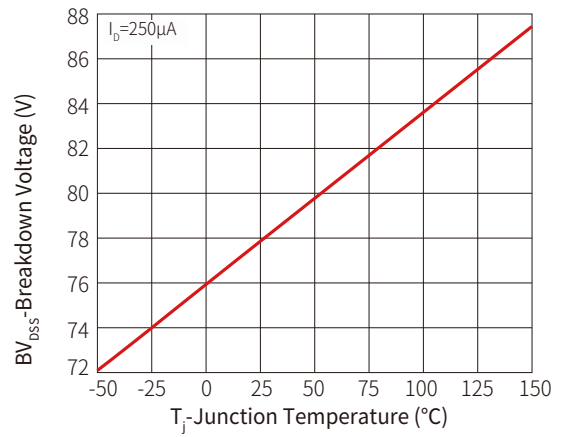
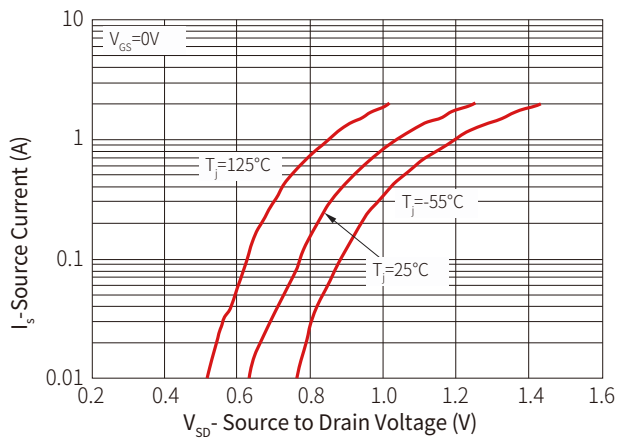
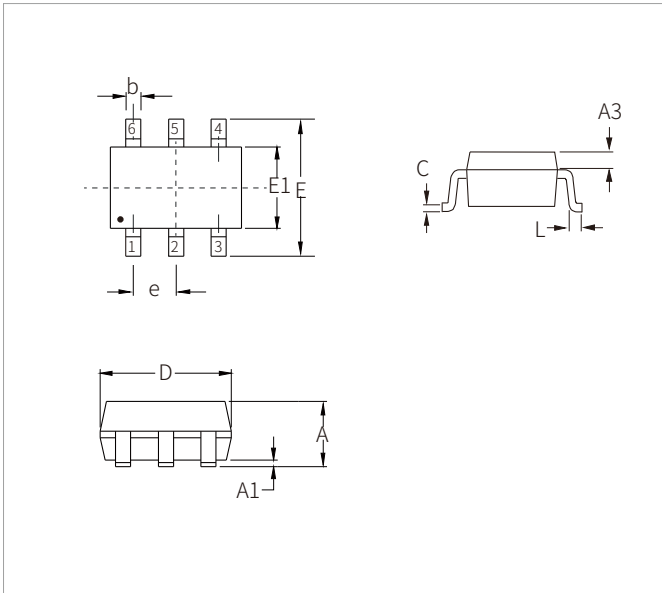


Figure 6: Gate Charge



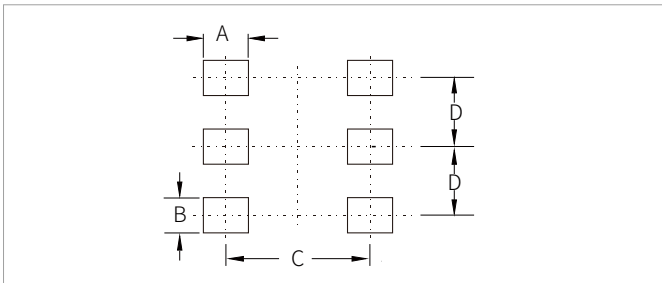
**Figure 7: Threshold Voltage vs Temperature**

**Figure 8: Breakdown Voltage vs Junction Temperature**

**Figure 9: Source-Drain Diode Forward Voltage**


## SOT-363 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.80	1.10	0.031	0.043
A1	0.00	0.10	0.000	0.004
A3	0.20REF		0.008REF	
D	1.80	2.20	0.070	0.086
E1	1.15	1.35	0.045	0.053
E	2.00	2.40	0.078	0.094
e	0.65BSC		0.026BSC	
b	0.10	0.40	0.004	0.016
L	0.10	0.50	0.004	0.020
C	0.10	0.25	0.004	0.010

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
A	0.50	0.0197
B	0.40	0.0157
C	1.90	0.0748
D	0.65	0.0250

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SNM2N7002KDW	SOT-363	3000PCS	7"

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