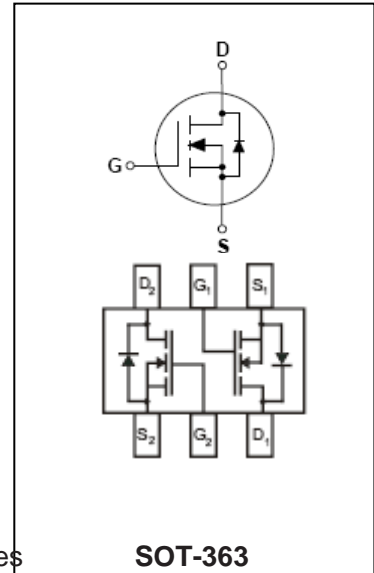


60V N-Channel Enhancement Mode MOSFET - ESD Protected 2N7002KDW

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
- Component are in compliance with EU RoHS 2002/95/EC directives

HF



ORDERING INFORMATION

Type No.	Marking	Package Code
2N7002KDW	K702	SOT-363

MAXIMUM RATING @ Ta=25°C unless otherwise specified

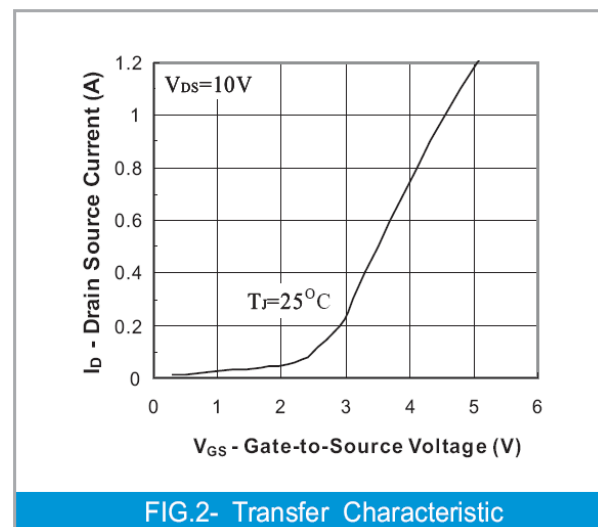
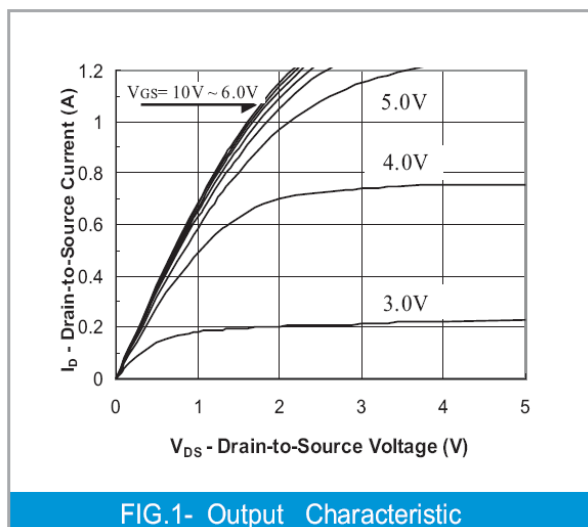
Symbol	Parameter	Value	Units
V_{DSS}	Drain-Source voltage	60	V
V_{DGR}	Drain-Gate voltage($R_{GS}\leq 1M\Omega$)	60	V
V_{GSS}	Gate -Source voltage - continuous -Non Repetitive ($t_p<50\mu s$)	± 20 ± 40	V
I_D	Maximum Drain current -continuous -Pulsed	115 800	mA
P_D	Power Dissipation	200	mW
$R_{\theta JA}$	Thermal resistance, Junction-to-Ambient	625	°C/W
T_J, T_{stg}	Junction and Storage Temperature	-55 to +150	°C

60V N-Channel Enhancement Mode MOSFET - ESD Protected 2N7002KDW

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=10\mu A$	60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	-	2.5	
Gate-body Leakage	I_{GSS}	Forward $V_{DS}=0V, V_{GS}=20V$	-	-	10	uA
		Reverse $V_{DS}=0V, V_{GS}=-20V$	-	-	-10	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$	-	-	1	μA
Forward transconductance	g_{FS}	$V_{DS}=15V, I_D=250mA$	100	-	-	mS
Static drain-Source on-resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=200mA$	-	-	4.0	Ω
		$V_{GS}=10V, I_D=500mA$	-	-	3.0	
Drain-Source diode forward voltage	V_{SD}	$V_{GS}=0V, I_S=200mA$	-	0.82	1.3	V
Total Gate Charge	Q_g	$V_{DS}=15V, I_D=200mA,$ $V_{GS}=4.5V$	-	-	0.8	nC
Input capacitance	C_{ISS}	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	-	-	35	pF
Output capacitance	C_{OSS}		-	-	10	
Reverse transfer capacitance	C_{RSS}		-	-	5	
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD}=30V, R_L=150\Omega$ $I_D=200mA, V_{GEN}=10V,$	-	-	20	ns
Turn-Off Delay Time	$t_{D(OFF)}$	$R_{GEN}=10\Omega$	-	-	40	ns

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified



60V N-Channel Enhancement Mode MOSFET - ESD Protected 2N7002KDW

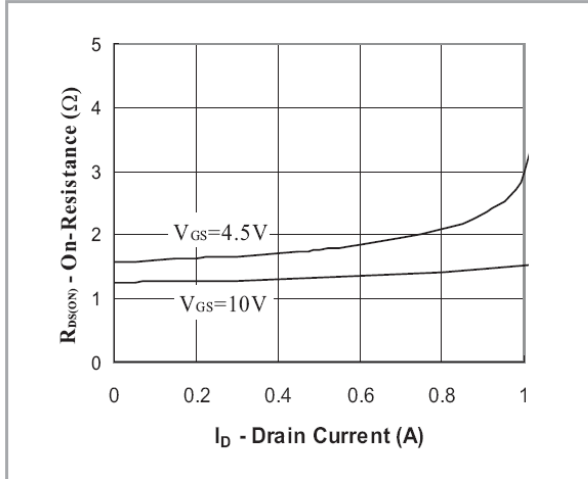


FIG.3- On Resistance vs Drain Current

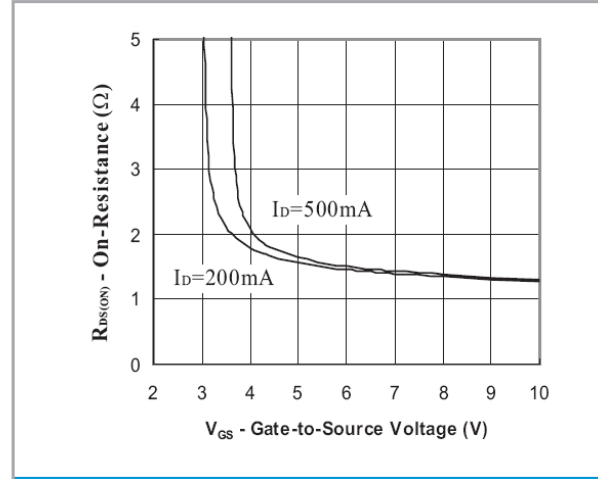


FIG.4- On Resistance vs Gate to Source Voltage

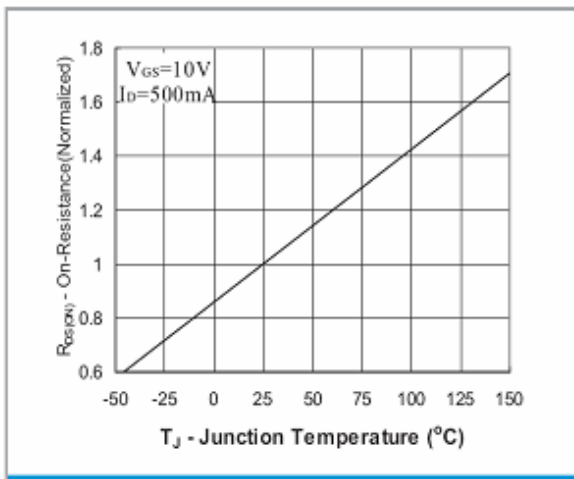


FIG.5- On Resistance vs Junction Temperature

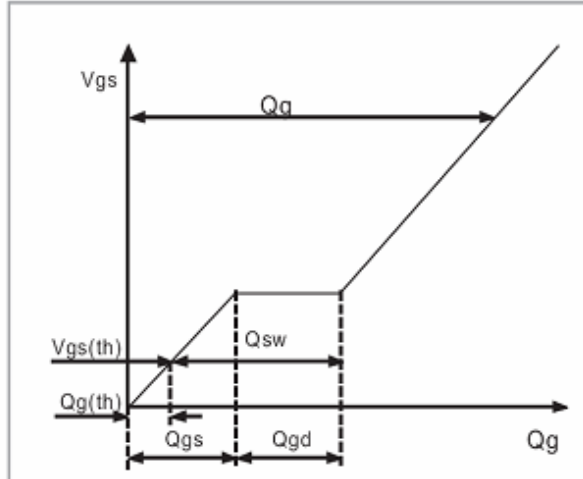


Fig.6 - Gate Charge Waveform

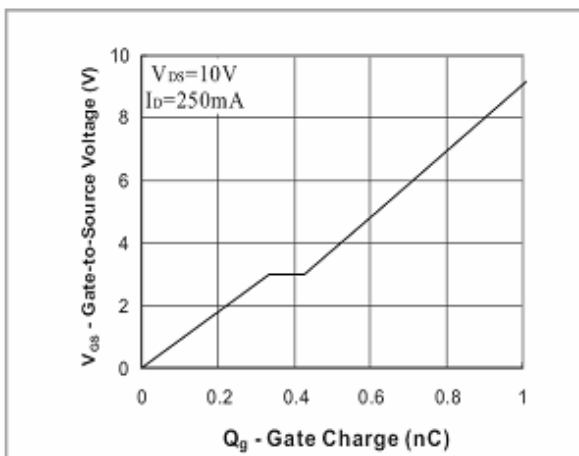


Fig.7 - Gate Charge

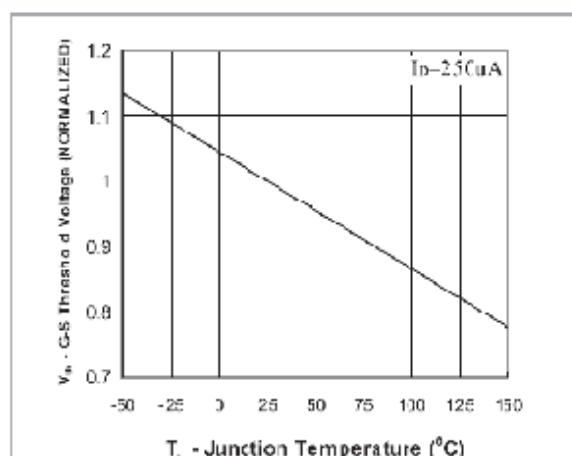
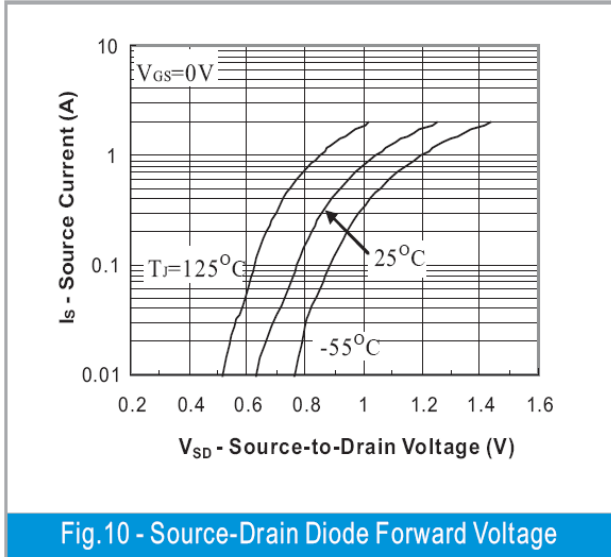
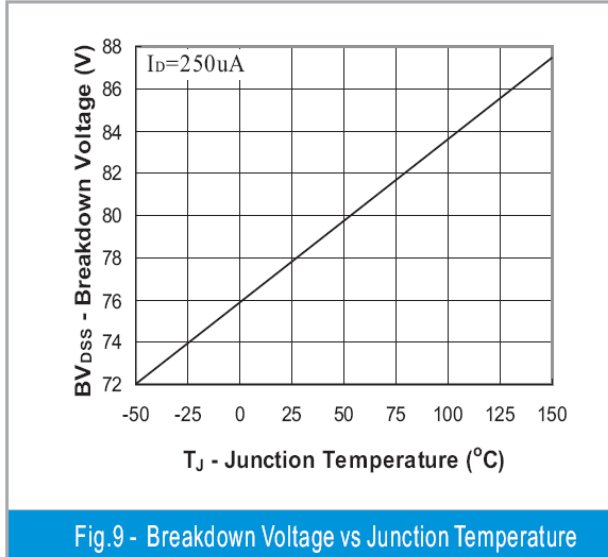


Fig.8 - Threshold Voltage vs Temperature

60V N-Channel Enhancement Mode MOSFET - ESD Protected 2N7002KDW

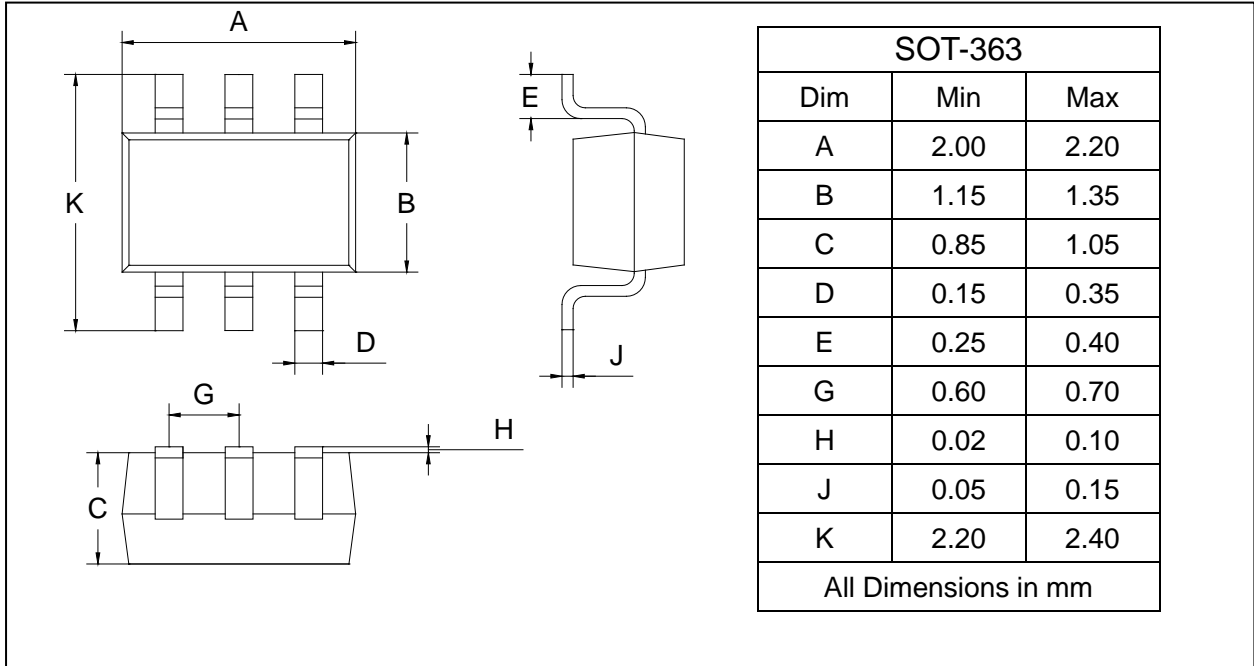


60V N-Channel Enhancement Mode MOSFET - ESD Protected 2N7002KDW

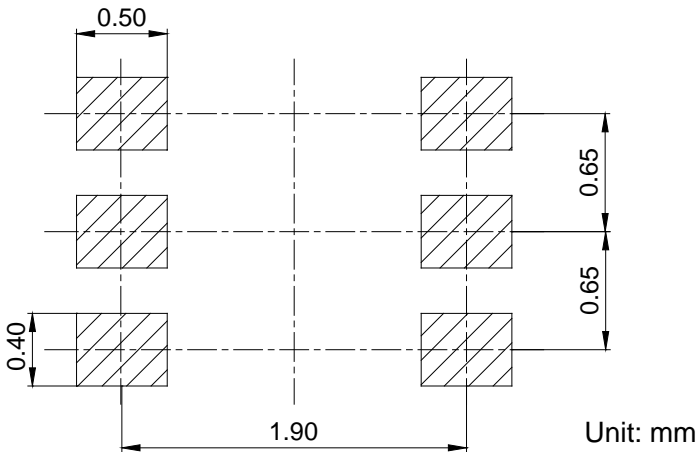
PACKAGE OUTLINE

Plastic surface mounted package

SOT-363



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
2N7002KDW	SOT-363	3000pcs / Tape & Reel