



2N7002AKWH
0.38A 60V Dual N-CHANNEL MOSFET

Features

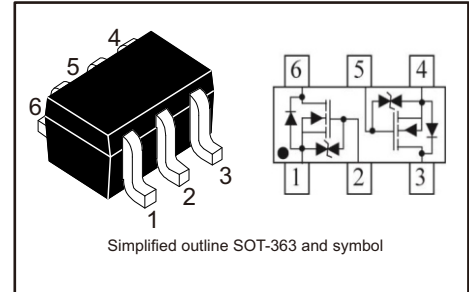
- Low On-Resistance
- low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Small Surface Mount Package
- ESD Protected Gate : 2000V
- Totally Lead-Free & Fully RoHs Compliant(Note 1)
- Halogen and Antimony Free. “Green” Device (Note2)

Applications

- Motor Control
- Power Management Functions

PINNING

PIN	DESCRIPTION
2,5	GATE
3,6	DRAIN
1,4	SOURCE



Absolute Maximum Ratings (Ta=25°C, unless otherwise specified)

Parameter	Symbols	Ratings	Units
Drain-Source Voltage	V_{DSS}	60	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current	I_D	0.38	A
Total Device Dissipation	P_D	300	mW
Junction-to-Ambient	$R_{\theta JA}$	417	°C/W
Operation Junction Temperature And Storage Temperature	T_j, T_{stg}	-55 ~ +150	°C

Notes: 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. Halogen-and Antimony-free "Green" products are defined as those which contain <900ppm bromine,<900ppm chlorine (<1500ppm total Br +Cl) and <1000ppm antimony compounds.

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Parameter	Symbols	Test Conditions	Min	Typ	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	B_{VDSS}	$V_{GS} = 0V, I_D = 10\mu A$	60			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = 60V, V_{GS} = 0V$			1	μA
Gate- Source Leakage Current	Forward	I_{GSS}			10	μA
	Reverse				$V_{GS} = -20V, V_{DS} = 0V$	



On Characteristics						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	1.5	2.5	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 0.3A$		1.6	2.5	Ω
		$V_{GS} = 4.5V, I_D = 0.2A$		1.9	3.0	Ω
HBM	ESD	$V_{DS} = 10V, I_D = 0.115A$	2.0			KV
Dynamic Characteristics						
Input Capacitance	C_{ISS}	$V_{DS} = 25V,$ $V_{GS} = 0V,$ $f = 1.0MHz$		23		pF
Output Capacitance	C_{OSS}			3.4		pF
Reverse Transfer Capacitance	C_{RSS}			1.4		pF
Switching Characteristics						
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD} = 30V, I_D = 3A, R_L = 150\Omega$ $V_{GEN} = 10, R_{GEN} = 25\Omega$		10		ns
Turn-Off Delay Time	$t_{D(OFF)}$			33		ns

Typical Characteristics

Fig.1 Typical Output Characteristic

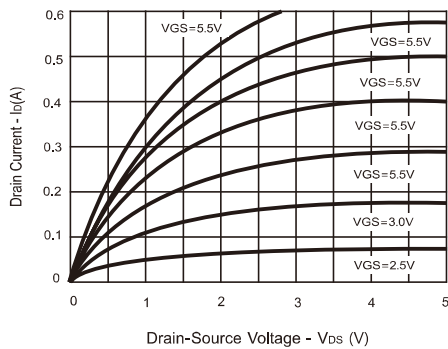


Fig.2 Typical Transfer Characteristics

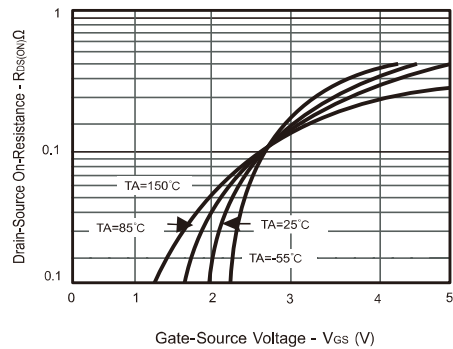


Fig.3 On-Resistance vs. Drain Current & Gate Voltage

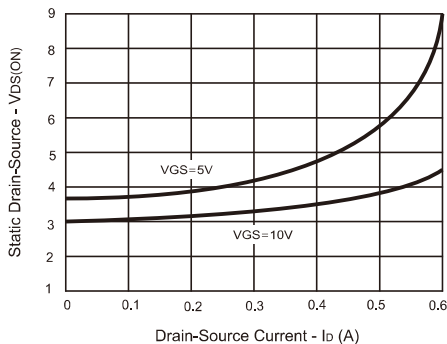


Fig.4 Normalized Static Drain-Source On-Resistance

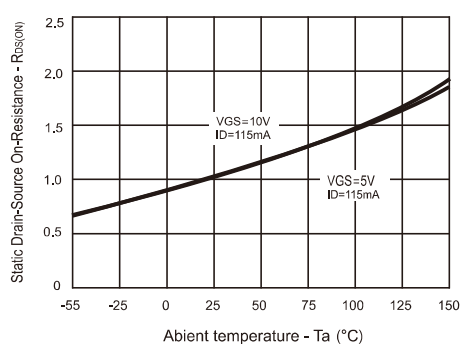




Fig.5 Gate Threshold Variation vs.Ambient Temperature

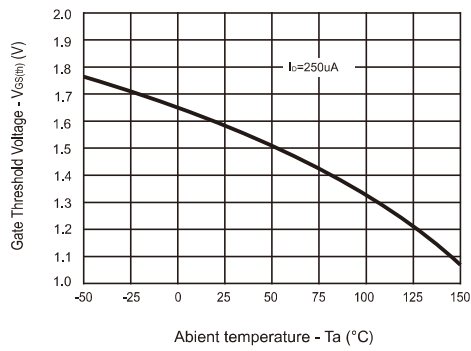


Fig.6 Typical Total Capacitance

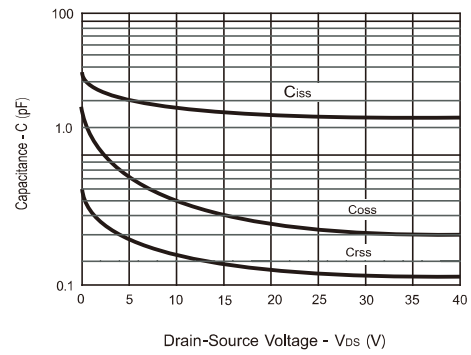
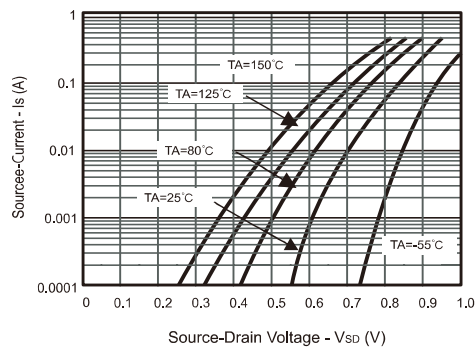
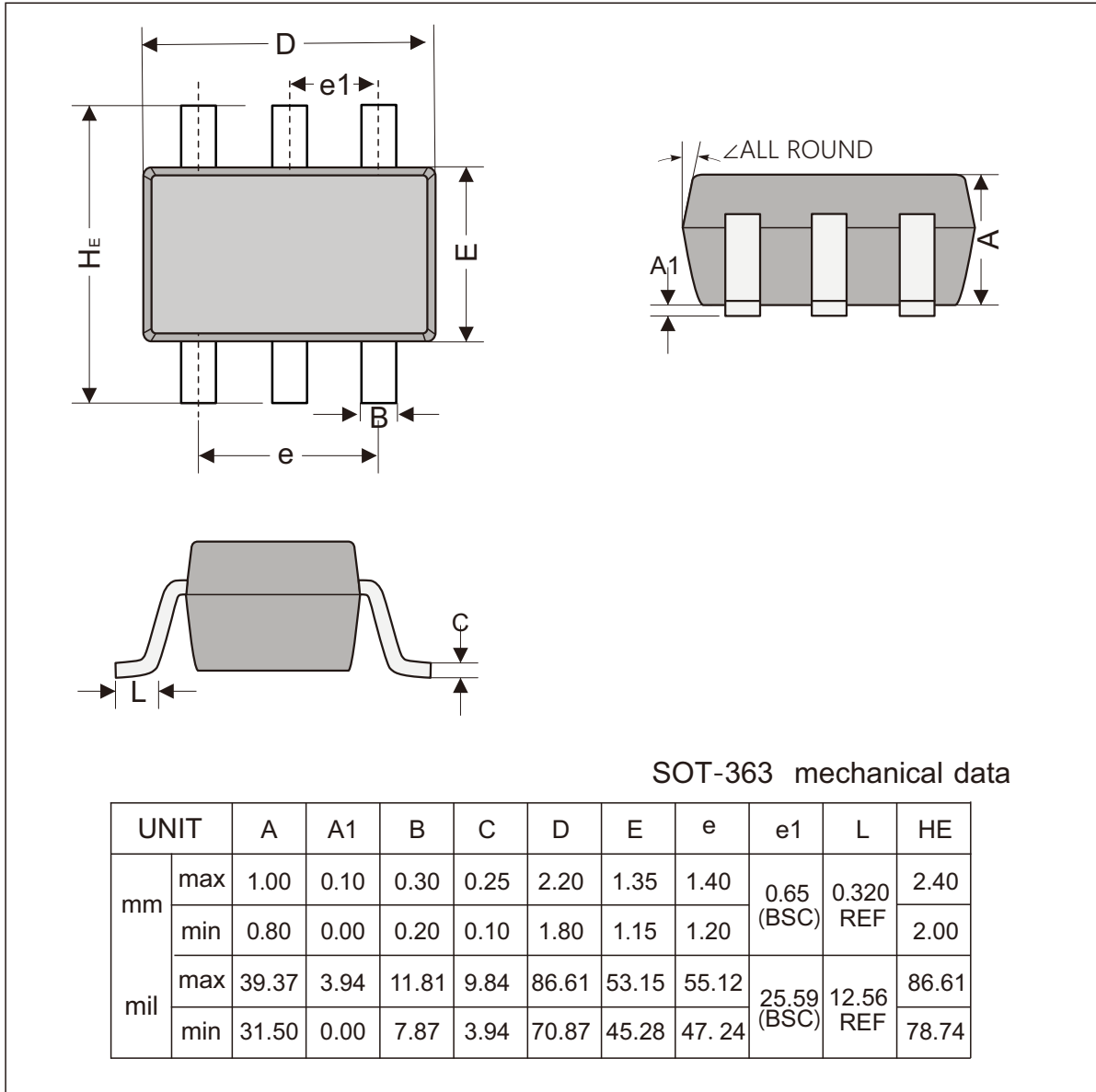


Fig.7 Reverse Dain Current vs.Source-Drain Voltage

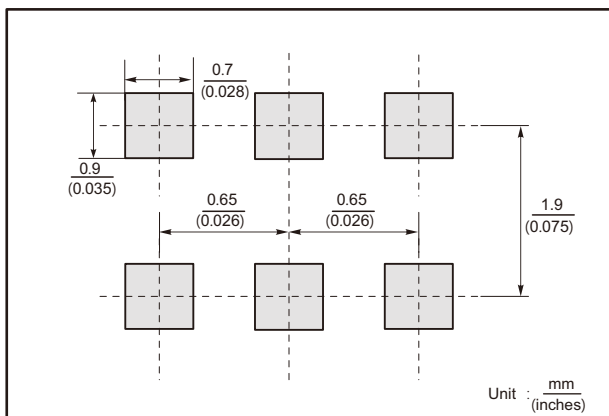




SOT-363 Package Outline Dimensions



The recommended mounting pad size



Marking

Type number	Marking code
2N7002AKWH	72K



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