



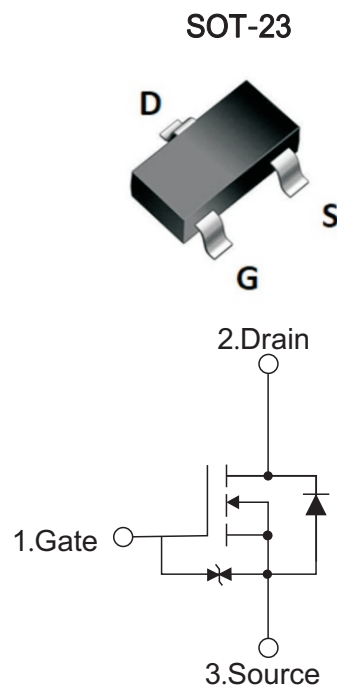
2N7002AKB
0.5A 60V N-CHANNEL MOSFET

Features

- Fast Switching Capability
- Avalanche Energy Tested
- Low On Resistance
- Low Input Capacitance
- Small Surface Mount Package

Applications

- Motor Control
- Power Management Functions



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	0.5	A
Operation Junction Temperature And Storage Temperature	T_j, T_{stg}	-55 ~ +150	°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	I_{GSS}	$V_{GS} = 20V, V_{DS} = 0V$			10	μA
		$V_{GS} = -20V, V_{DS} = 0V$			-10	
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	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 0.5A$		0.9	2.0	Ω
		$V_{GS} = 4.5V, I_D = 0.3A$		1.4	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

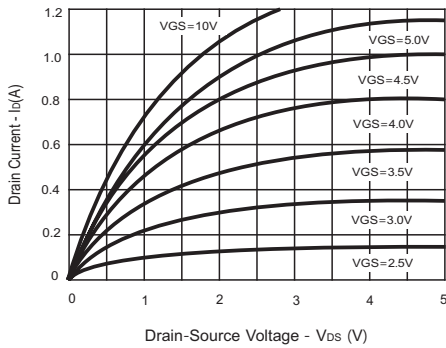


Fig.2 Typical Transfer Characteristics

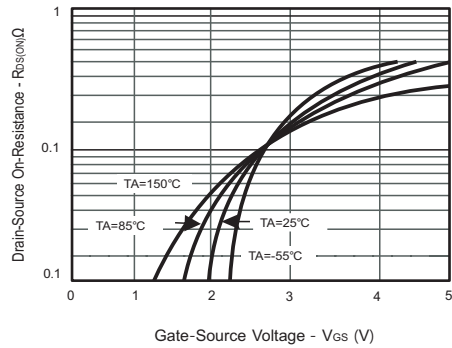


Fig.3 On-Resistance vs. Drain Current & Gate Voltage

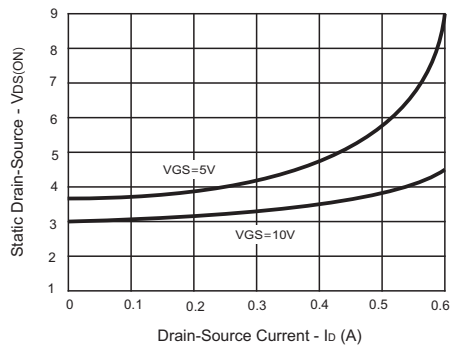


Fig.4 Normalized Static Drain-Source On-Resistance

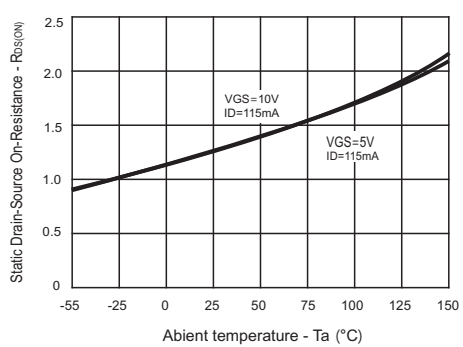




Fig.5 Gate Threshold Variation vs.Ambient Temperature

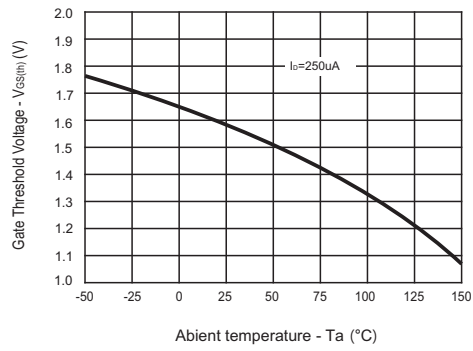


Fig.6 Typical Total Capacitance

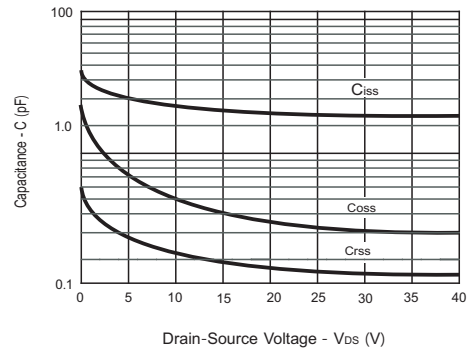
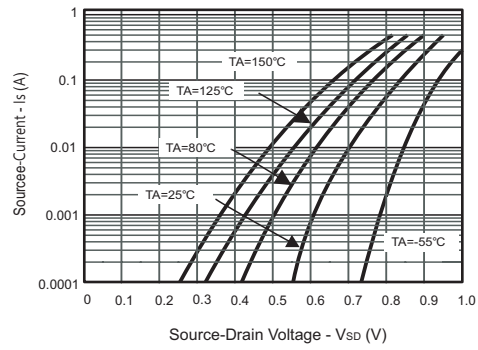
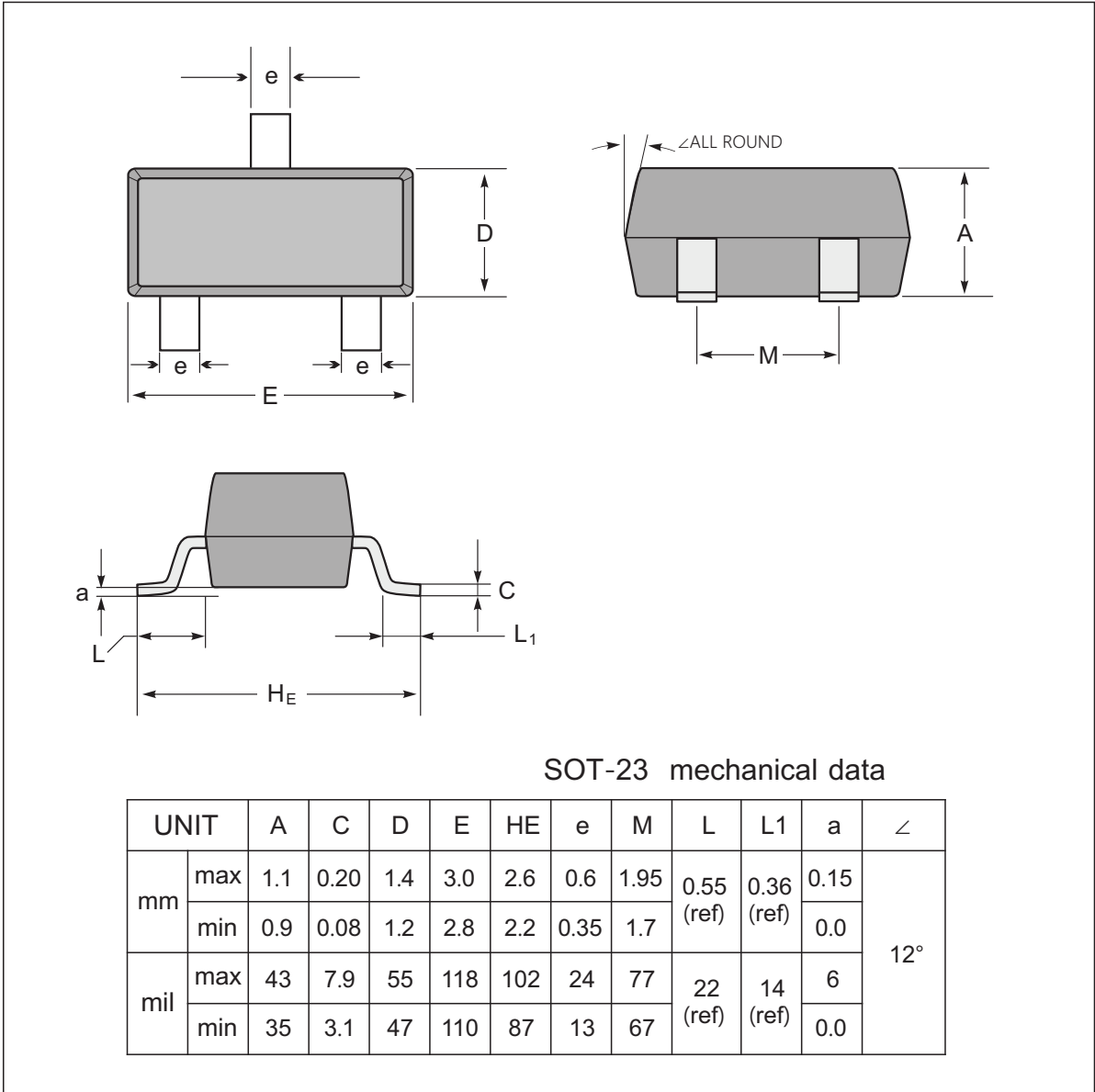


Fig.7 Reverse Dain Current vs.Source-Drain Voltage

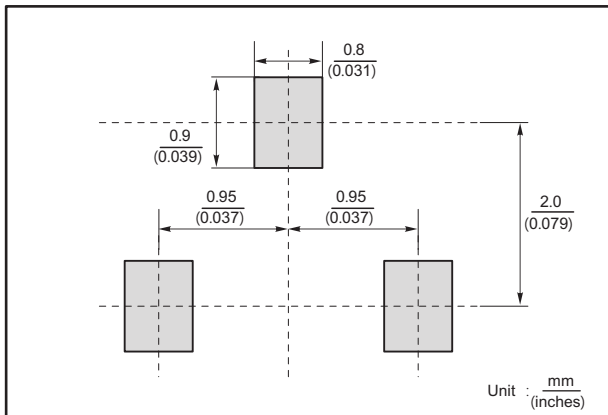




SOT-23 Package Outline Dimensions



The recommended mounting pad size



Marking

Type number	Marking code
2N7002AKB	702K