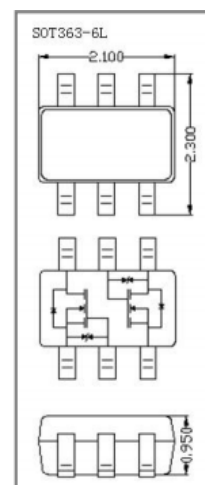
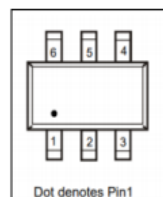
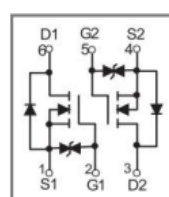


N-Channel MOSFET

- ◇ Epoxy meets UL 94 V-0 flammability rating
- ◇ High density cell design for low $R_{DS(ON)}$
- ◇ Voltage controlled small signal switch
- ◇ High Saturation Current Capability
- ◇ ESD Protected

Device Marking Code	
2N7002KDW	K27

Circuit and Pin Schematic



Maximum Ratings ($T_a = 25^\circ\text{C}$)

Symbol	Parameter	Value	Units
V_{DS}	Drain-source Voltage	60	V
V_{GS}	Gate-source Voltage	± 20	V
I_D	Drain Current	340	mA
P_d	Total Power Dissipation	150.	mW
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 to 150	$^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	820	$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
$V_{(BR)DSS}$	Drain-source Breakdown Voltage	$V_{GS} = 0V, I_D = 250 \mu\text{A}$	60			V
$V_{GS(th)}$	Gate-Threshold Voltage (note 1)	$V_{DS} = V_{GS}, I_D = 1\text{mA}$	1.0		2.5	V
I_{GSS}	Gate-body Leakage	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 10	μA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 48V, V_{GS} = 0V$			1	μA
R_{dson}	Drain-source On-resistance (note 1)	$V_{GS} = 4.5V, I_D = 200\text{mA}$ $V_{GS} = 10V, I_D = 500\text{mA}$			5.3 5.0	Ω
V_{sd}	Diode Forward Voltage (note 1)	$V_{GS} = 0V, I_S = 300\text{mA}$			1.5	V
Q_r	Recovered charge	$V_{GS} = 0V, I_S = 300\text{mA}$ $V_R = 25V, dI_S/dt = -100\text{A}/\mu\text{S}$		30		nC

Dynamic Characteristics

Ciss	Input Capacitance	V _{DS} =10V V _{GS} =0V F=1MHz			40	pF
Coss	Output Capacitance				30	
Crss	Reverse Transfer Capacitance				10	

Switching Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Td(on)	Turn on delay time	V _{DD} =50V, V _{GS} =10V, R _L =250Ω			10	ns
Td(off)	Turn off delay time	R _{GS} =50Ω, R _{GEN} =50Ω			15	
trr	Reverse recovery time	V _{GS} =0V, I _S =300mA, V _R =25V DI _S /dt=-100A/μs		30		

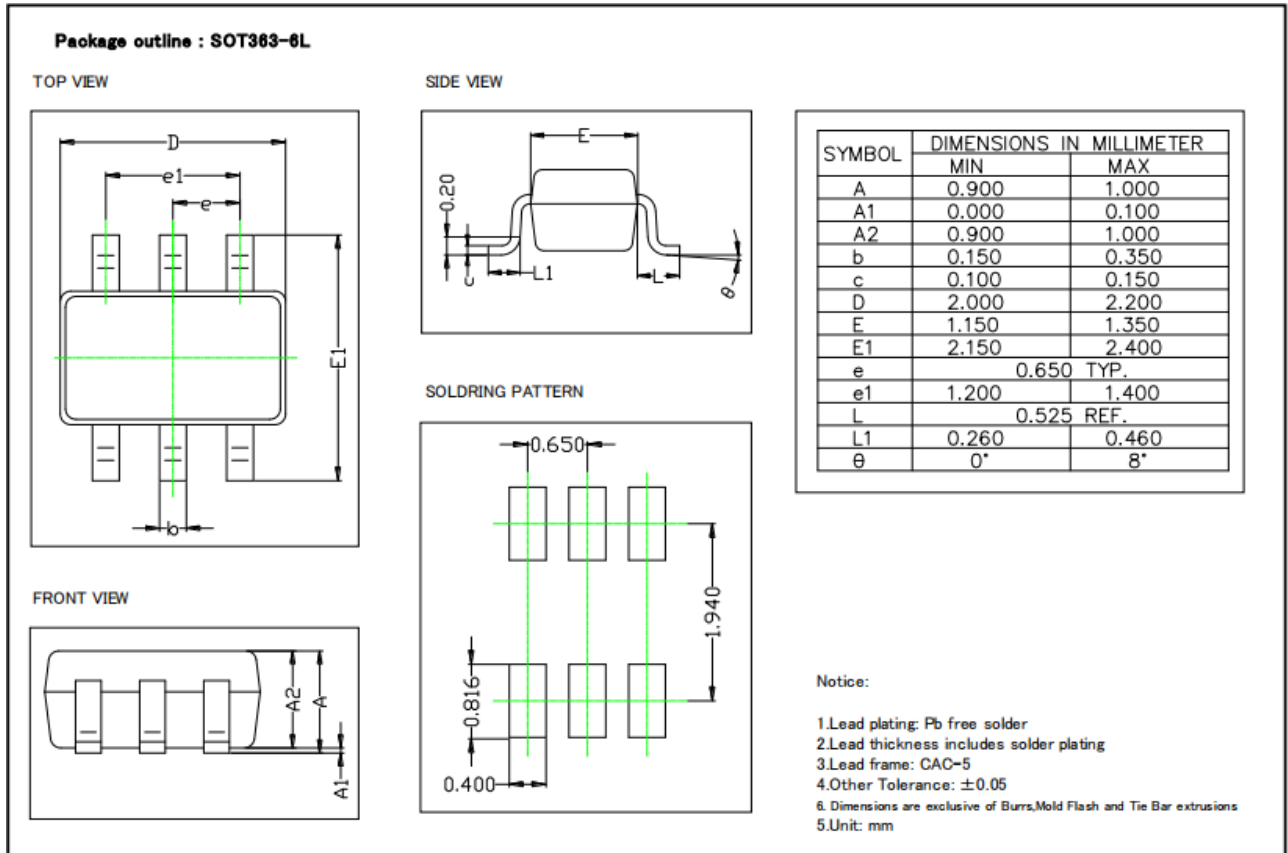
Gate - Source Zener Diode

BV _{GSO}	Gate-Source Breakdown Voltage	I _{GS} =±1mA(Open Drain)	±21.5		±30	V
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Note:

1. Pulse Test : Pulse width ≤300μs, duty cycle ≤2%.

Package Dimensions



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