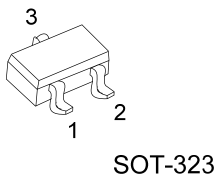
UNISONIC TECHNOLOGIES CO., LTD

2N7002AW

Power MOSFET

N-CHANNEL SILICON MOSFET GENERAL-PURPOSE SWITCHING DEVICE APPLICATIONS



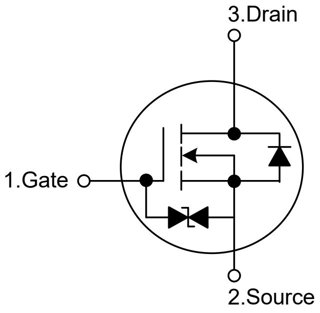
■ DESCRIPTION

The **2N7002AW** uses UTC advanced technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with low gate voltages. This device's general purpose is for switching device applications.

■ FEATURES

* $R_{DS(ON)} \leq 5.0\ \Omega$ @ V_{GS}=10V, I_D=300mA
$R_{DS(ON)} \leq 8.0\ \Omega$ @ V_{GS}=4.5V, I_D=50mA
* Fast switching capability
* With ESD Protected

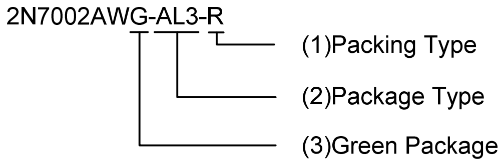
■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2N7002AWL-AL3-R	2N7002AWG-AL3-R	SOT-323	G	S	D	Tape Reel

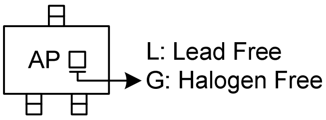
Note: Pin Assignment: G: Gate S: Source D: Drain



2N7002AWG-AL3-R
(1)Packing Type
(2)Package Type
(3)Green Package

(1) R: Tape Reel
(2) AL3: SOT-323
(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



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■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	60	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current	Continuous	I_D	300	mA
	Pulse		800	mA
Power Dissipation		P_D	200	mW
Derating above T_A=25°C			1.6	mW/°C
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-55 ~ +150	°C

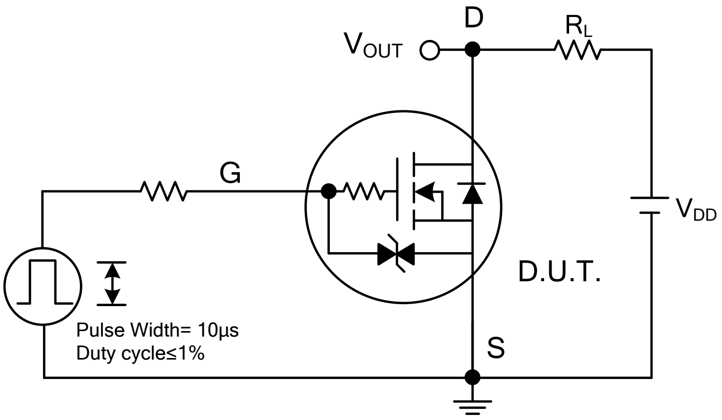
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=10μA	60			V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			1	μA
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±10	μA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS}, I_D=250μA	1.0		2.0	V
Static Drain-Source On-Resistance (Note)	$R_{DS(ON)}$	V_{GS}=10V, I_D=300mA			5.0	Ω
		V_{GS}=4.5V, I_D=50mA			8.0	Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	V_{DS}=25V, V_{GS}=0V, f=1.0MHz		15	50	pF
Output Capacitance	C_{OSS}			9	25	pF
Reverse Transfer Capacitance	C_{RSS}			4	5	pF
SWITCHING PARAMETERS						
Turn-ON Delay Time	$t_{D(ON)}$	I_D=0.2A, V_{DD}=30V, V_{GS}=10V, R_L=150Ω, R_G=10Ω		2.4	20	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			5.6	30	ns
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Maximum Continuous Drain-Source Diode Forward Current	I_S				300	mA
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}				0.8	A
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=300mA (Note)		0.88	1.5	V

Notes: 1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch. Minimum land pad size.
2. Pulse width≦300μs, Duty cycle≦1%.

■ SWITCHING TIME TEST CIRCUIT



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