



UT2308Z

Power MOSFET

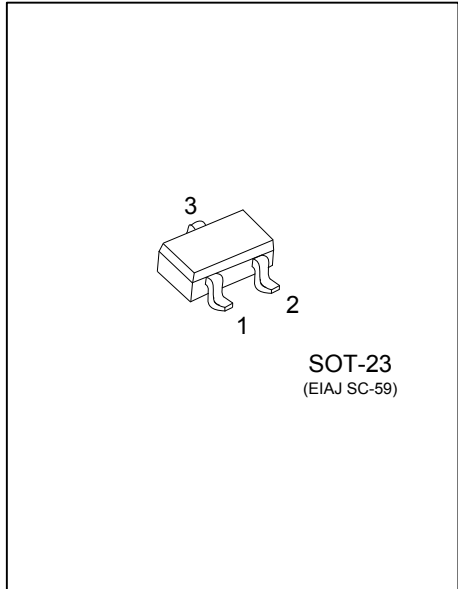
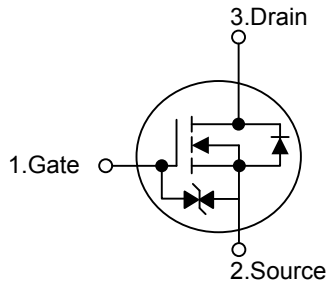
3.8A, 30V N-CHANNEL ENHANCEMENT MODE

DESCRIPTION

The UTC **UT2308Z** is N-channel Power MOSFET, designed with high density cell, with fast switching speed, ultra low on-resistance and excellent thermal and electrical capabilities.

Used in commercial and industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

SYMBOL



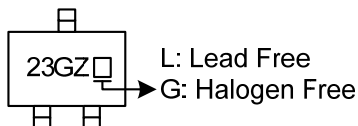
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UT2308ZL-AE3-R	UT2308ZG-AE3-R	SOT-23	G	S	D	Tape Reel

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

<p>UT2308ZG-AE3-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



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■ ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	± 12	V
Continuous Drain Current	I_D	3.8	A
Power Dissipation	P_D	1.4	W
Junction Temperature	T_J	-55 ~ +150	$^\circ\text{C}$

Notes: 1. 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.

2. Repetitive Rating: Pulse width limited by maximum junction temperature

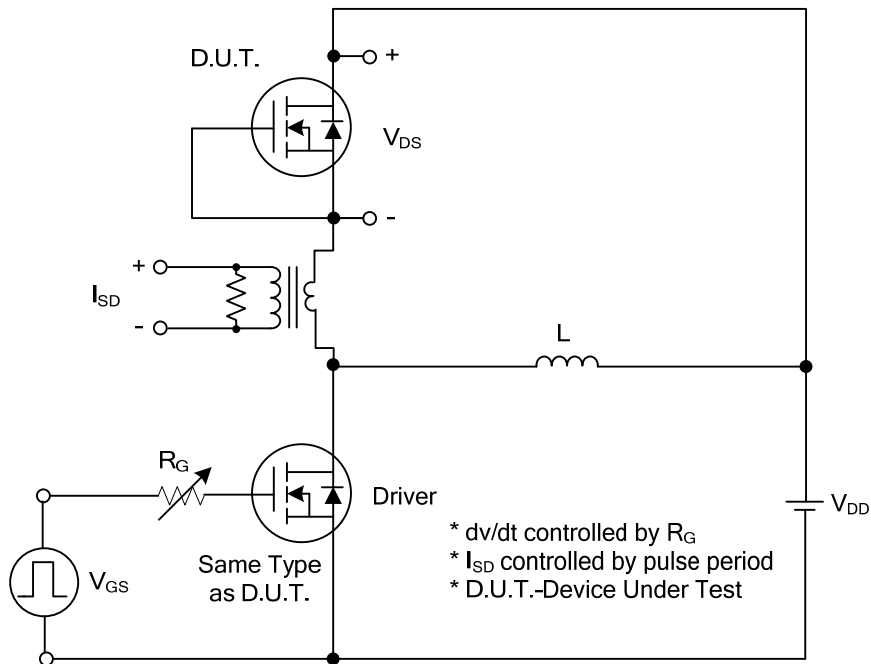
■ ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	30			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$			1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 10V$			± 10	nA
ON CHARACTERISTICS						
Gate-Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.6		1.4	V
Static Drain-Source On-State Resistance (Note2)	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=2.7A$		54	70	m Ω
		$V_{GS}=2.5V, I_D=1.0A$		75	100	m Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		184		pF
Output Capacitance	C_{OSS}			22		pF
Reverse Transfer Capacitance	C_{RSS}			8		pF
SWITCHING CHARACTERISTICS						
Total Gate Charge	Q_G	$V_{DS}=15V, V_{GS}=4.5V, I_D=2.1A$		4.7		nC
Gate Source Charge	Q_{GS}			1.9		nC
Gate-Drain Charge	Q_{GD}			1.6		nC
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD}=15V, R_L=15\Omega, I_D=1.0A, V_{GS}=10V, R_G=6\Omega$		97.2		ns
Turn-On Rise Time	t_R			128		ns
Turn-Off Delay Time	$t_{D(OFF)}$			2600		ns
Turn-Off Fall Time	t_F			677		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=3.4A$		0.8	1.2	V

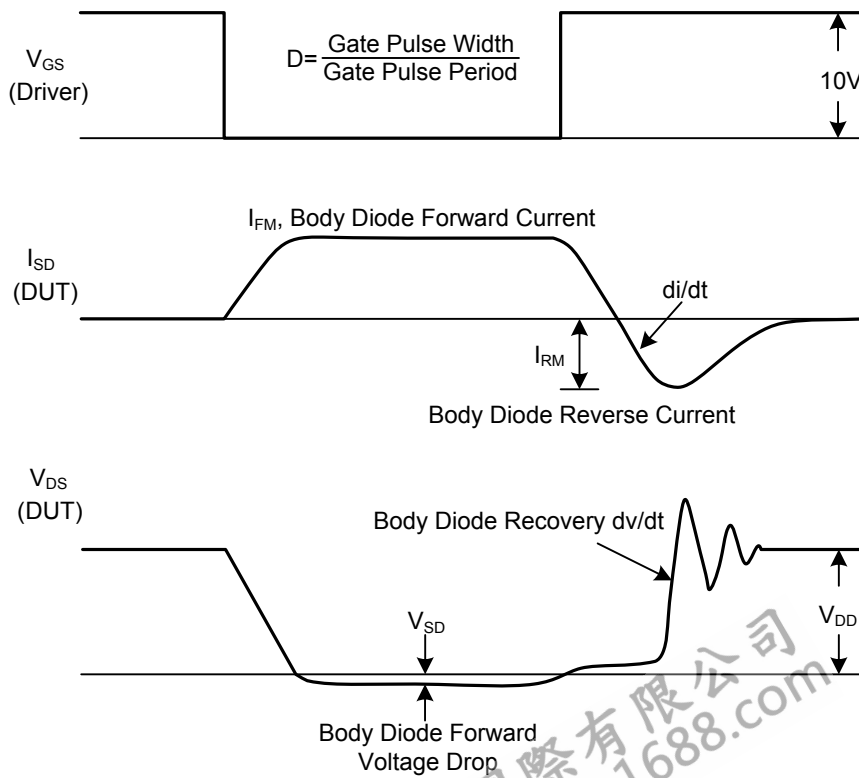
Notes: 1. Pulse Test : Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$.

2. Surface mounted on FR4 board $t \leq 5$ sec.

■ TEST CIRCUITS AND WAVEFORMS

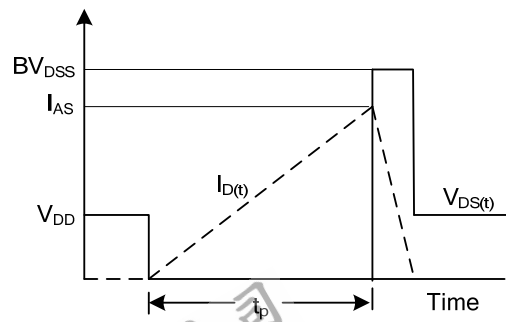
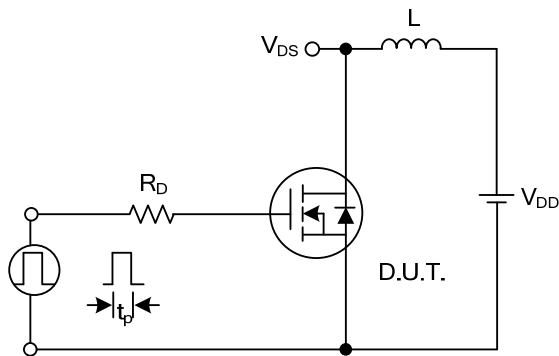
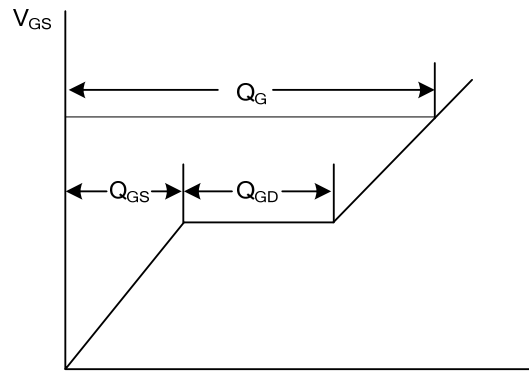
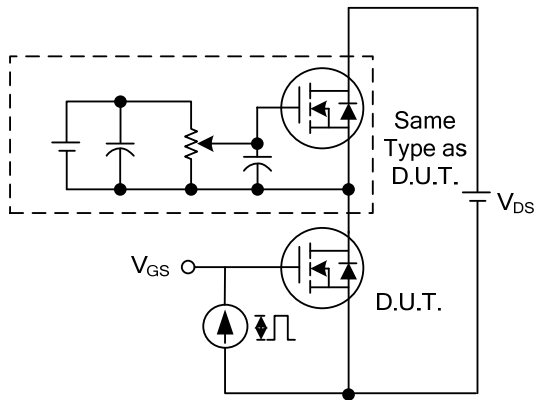
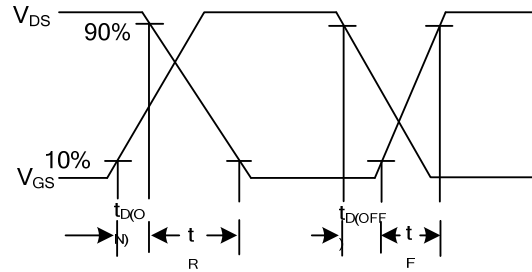
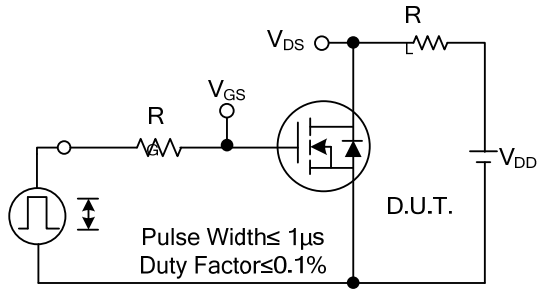


Peak Diode Recovery dv/dt Test Circuit

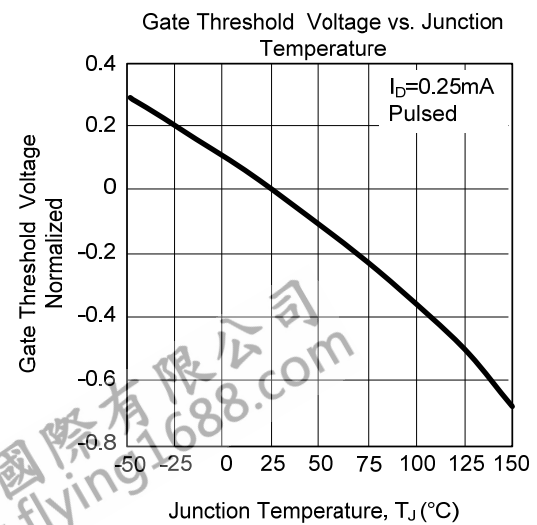
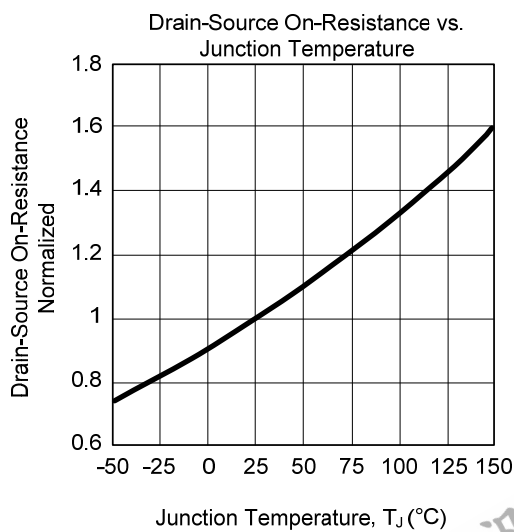
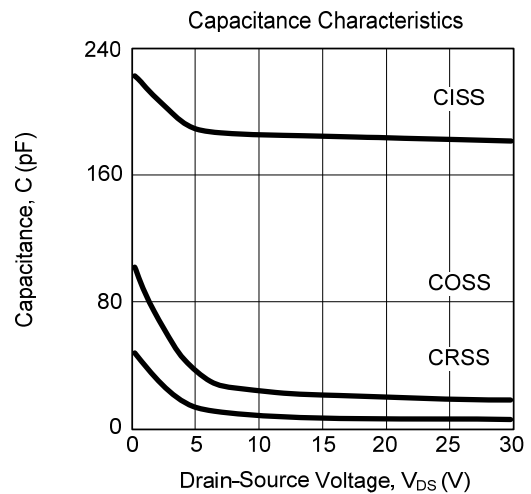
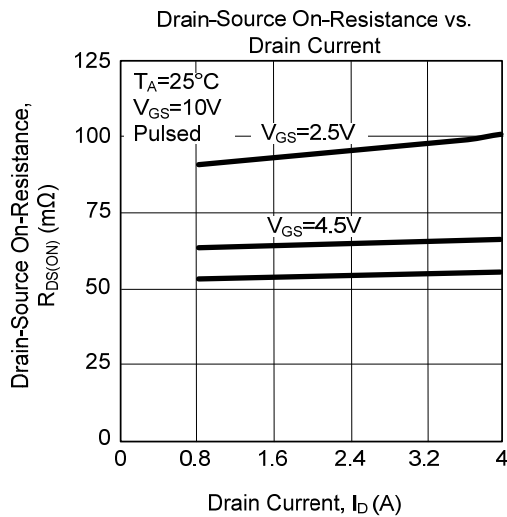
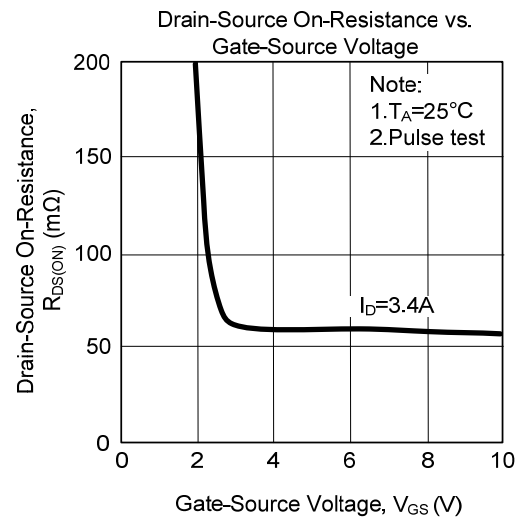
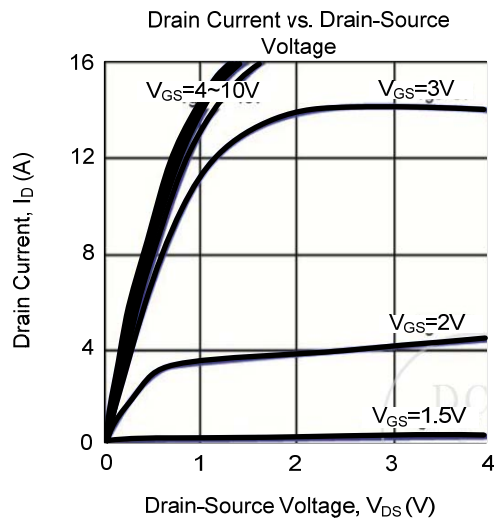


Peak Diode Recovery dv/dt Waveforms

■ TEST CIRCUITS AND WAVEFORMS



TYPICAL CHARACTERISTICS



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