



UT3403

Power MOSFET

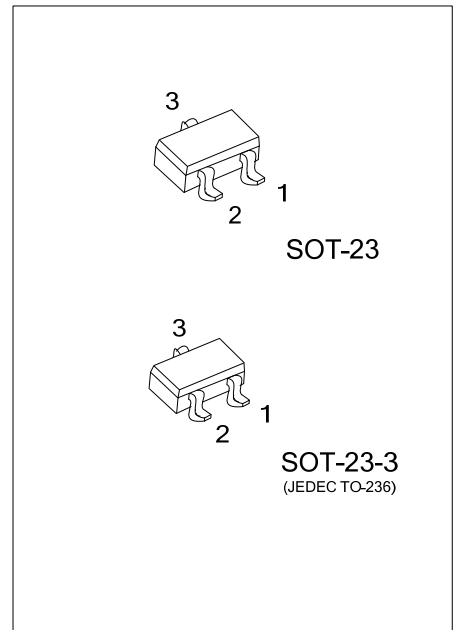
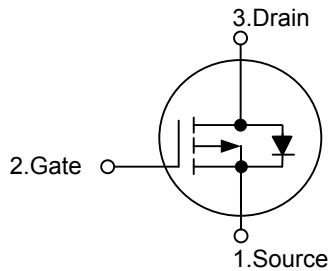
-2.6 Amps, 30 Volts P-CHANNEL POWER MOSFET

DESCRIPTION

The UTC **UT3403** is P-channel enhancement mode Power MOSFET, designed with high density cell, with fast switching speed, low on-resistance, excellent thermal and electrical capabilities and operation with low gate voltages.

This device is suitable for use as a load switch or in PWM applications.

SYMBOL

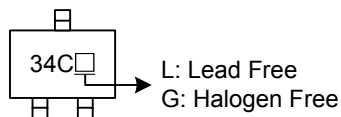


ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UT3403L-AE2-R	UT3403G-AE2-R	SOT-23-3	S	G	D	Tape Reel
UT3403L-AE3-R	UT3403G-AE3-R	SOT-23	S	G	D	Tape Reel

<p>UT3403L-AE3-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Free</p>	<p>(1) R: Tape Reel</p> <p>(2) AE2: SOT-23-3, AE3: SOT-23</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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MARKING



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

PARAMETER	SYMBOL	RATING	UNITS
Drain-Source Voltage	V_{DSS}	-30	V
Gate-Source Voltage	V_{GSS}	± 12	V
Continuous Drain Current (Note 3)	I_D	-2.6	A
Pulsed Drain Current (Note 1)	I_{DM}	-20	A
Power Dissipation(Note 3)	P_D	1.4	W
Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

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.

■ THERMAL DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient (Note 3)	θ_{JA}		100	125	$^\circ\text{C/W}$

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

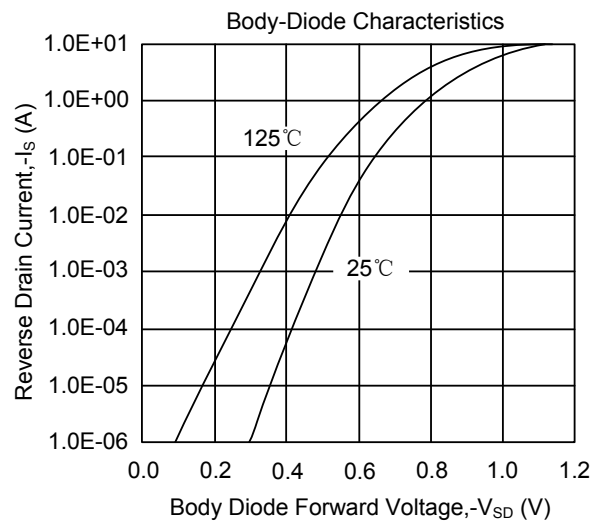
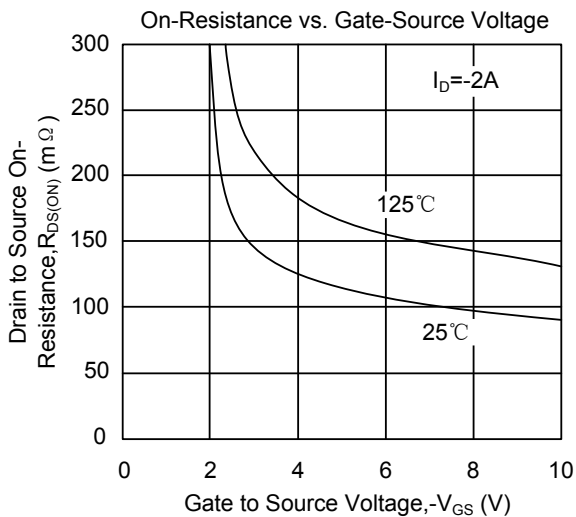
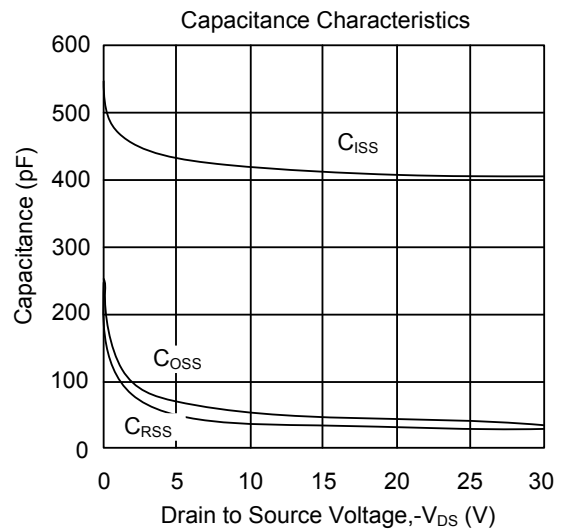
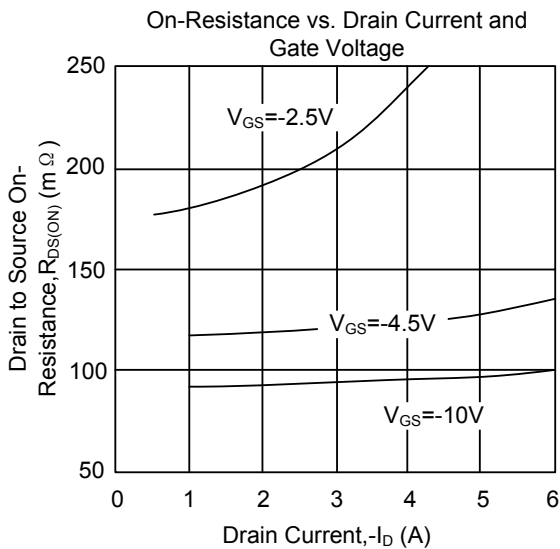
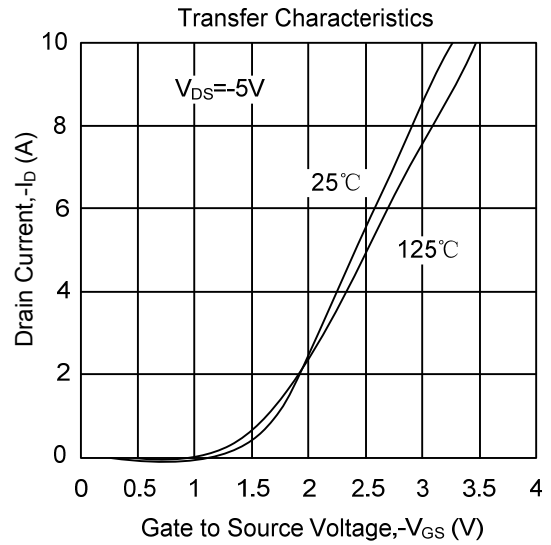
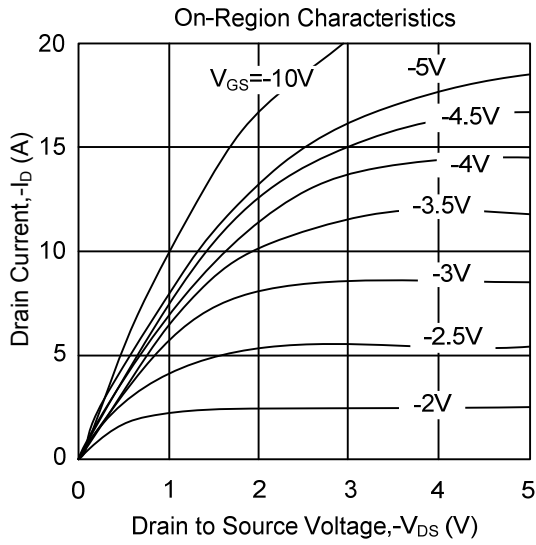
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = -250\mu\text{A}$, $V_{GS} = 0\text{V}$	-30			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = -24\text{V}$, $V_{GS} = 0\text{V}$			-1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{DS} = 0\text{V}$, $V_{GS} = \pm 12\text{V}$			± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}$, $I_D = -250\mu\text{A}$	-0.6	-1	-1.4	V
Drain-Source On-State Resistance (Note 2)	$R_{DS(ON)}$	$V_{GS} = -10\text{V}$, $I_D = -2.6\text{A}$		102	130	m Ω
		$V_{GS} = -4.5\text{V}$, $I_D = -2\text{A}$		128	180	m Ω
		$V_{GS} = -2.5\text{V}$, $I_D = -1\text{A}$		187	260	m Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS} = 0\text{V}$, $V_{DS} = -15\text{V}$, $f = 1\text{MHz}$		409	500	pF
Output Capacitance	C_{OSS}			55		pF
Reverse Transfer Capacitance	C_{RSS}			42		pF
SWITCHING PARAMETERS						
Turn-ON Delay Time (Note 2)	$t_{D(ON)}$	$V_{GS} = -10\text{V}$, $V_{DS} = -15\text{V}$ $R_L = 6\Omega$, $R_G = 3\Omega$		5.3	8	ns
Turn-ON Rise Time	t_R			4.4	9	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			31.5	45	ns
Turn-OFF Fall Time	t_F			8	16	ns
Total Gate Charge (Note 2)	Q_G	$V_{GS} = -4.5\text{V}$, $V_{DS} = -15\text{V}$, $I_D = -2.5\text{A}$		4.4	5.3	nC
Gate-Source Charge	Q_{GS}			0.8		nC
Gate-Drain Charge	Q_{GD}			1.32		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage(Note2)	V_{SD}	$V_{GS} = 0\text{V}$, $I_S = -1\text{A}$		-0.85	-1	V
Maximum Continuous Drain-Source Diode Forward Current	I_S				-2	A
Reverse Recovery Time	t_{RR}	$I_F = -2.5\text{A}$, $di/dt = 100\text{A}/\mu\text{s}$		15.8	19	ns
Reverse Recovery Charge	Q_{RR}				8	12

Note: 1. Pulse width limited by $T_{J(MAX)}$

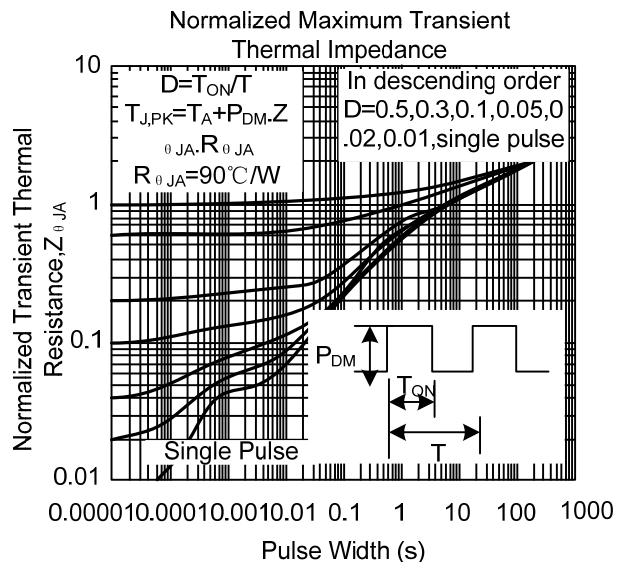
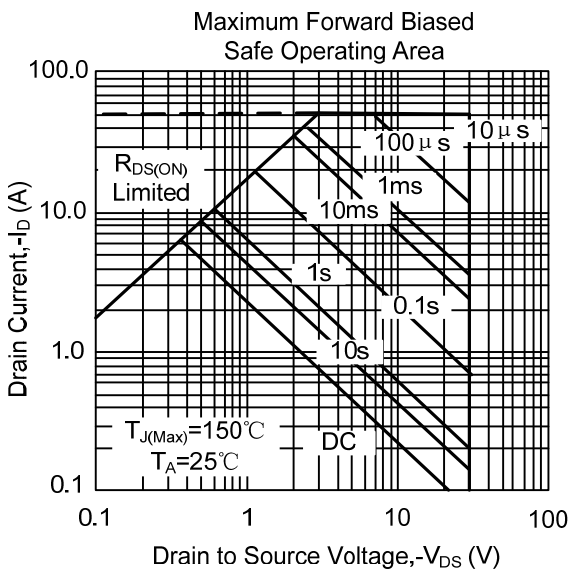
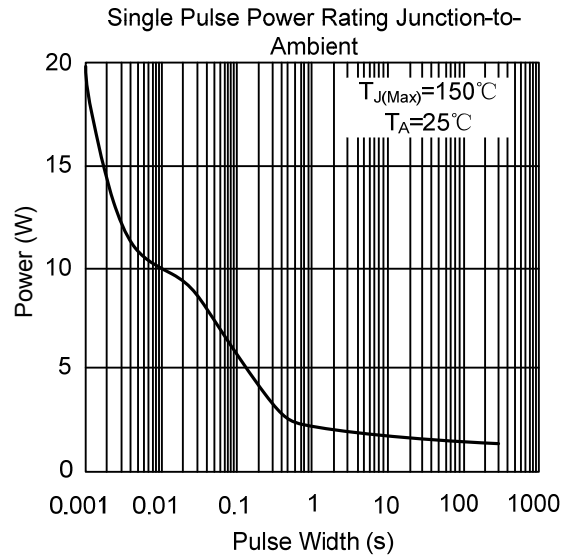
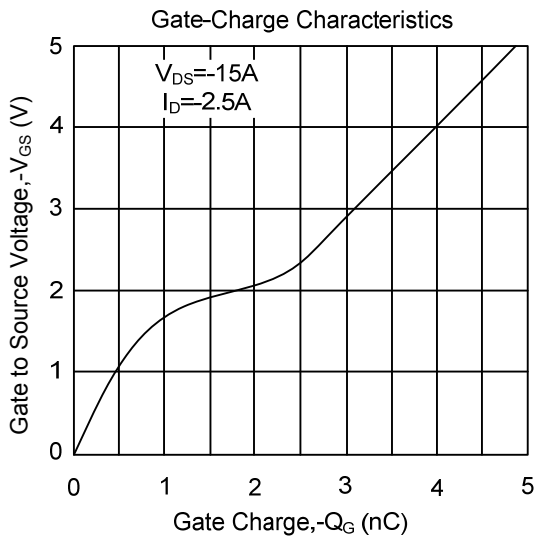
2. Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

3. Surface mounted on 1 in² copper pad of FR4 board

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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