



UT3403

Power MOSFET

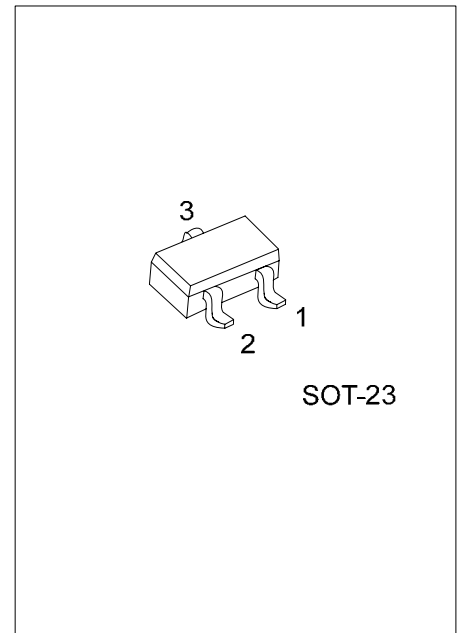
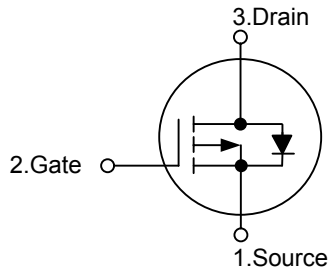
P-CHANNEL ENHANCEMENT MODE

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, operation with low gate voltages.

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

SYMBOL



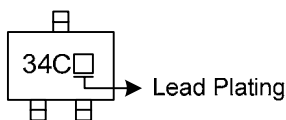
*Pb-free plating product number: UT3403L

ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
UT3403-AE3-R	UT3403L-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 Plating</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23</p> <p>(3) L: Lead Free Plating, Blank: Pb/Sn</p>
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MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_A = 25$, 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	P_D	1.4	W
Junction Temperature	T_J	+150	
Storage Temperature	T_{STG}	-55 ~ +150	

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

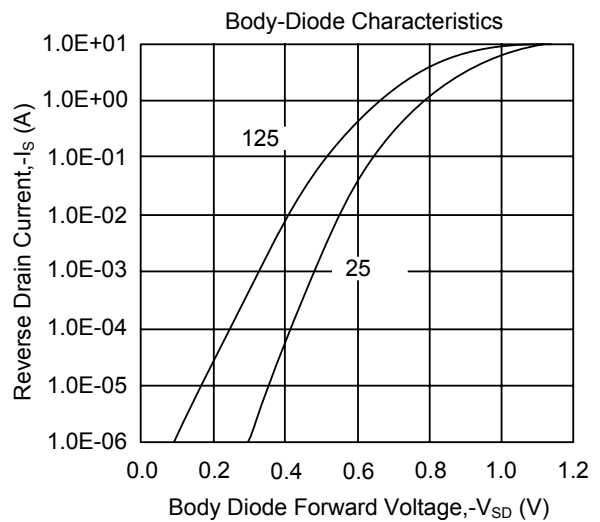
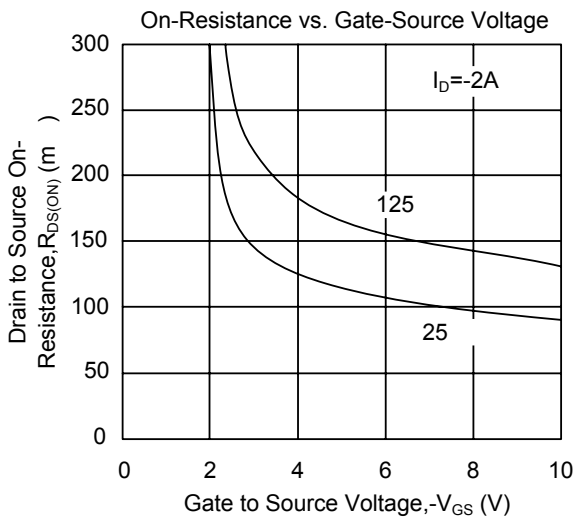
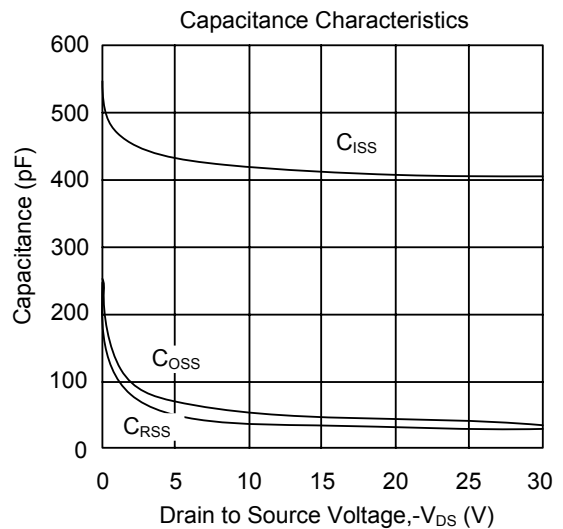
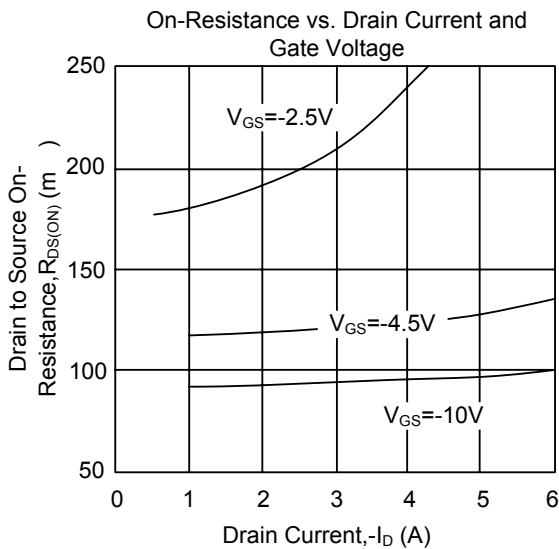
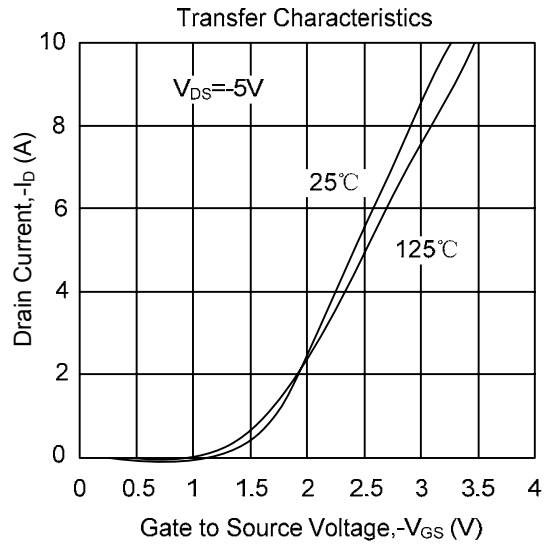
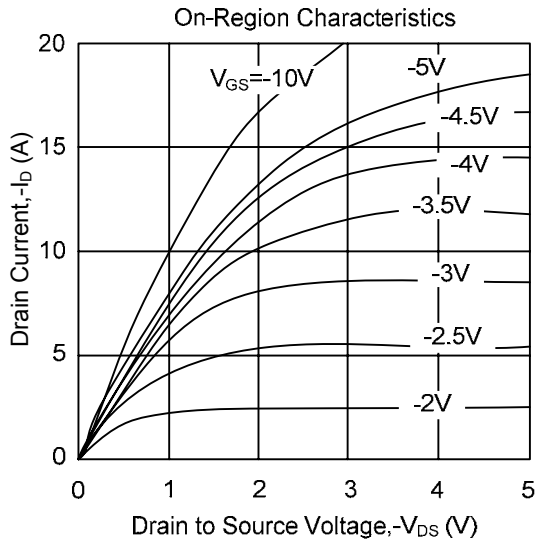
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction-to-Ambient	θ_{JA}		100	125	$^{\circ}C/W$

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

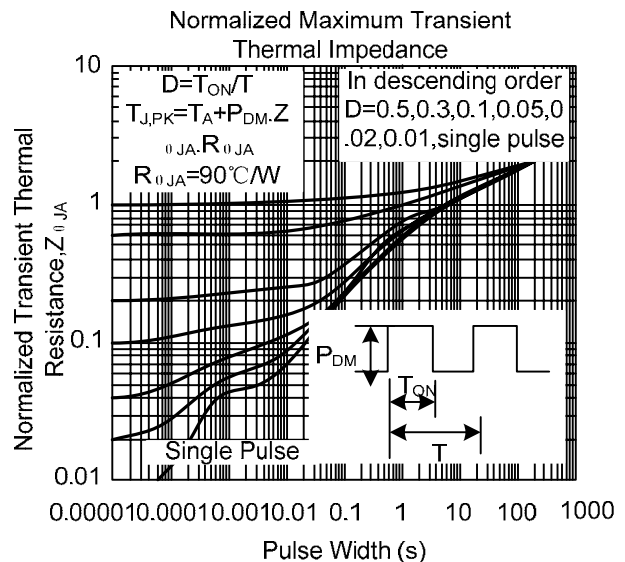
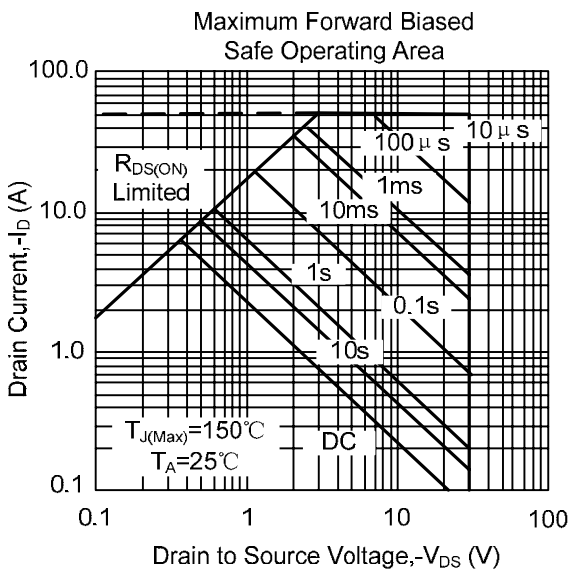
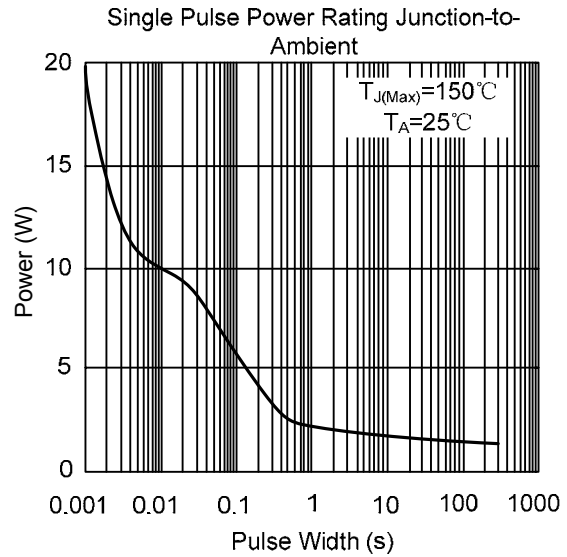
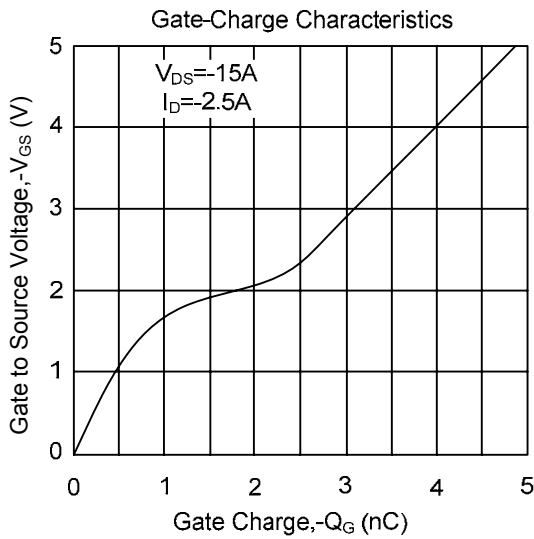
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = -250\mu A, V_{GS} = 0V$	-30			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = -24V, V_{GS} = 0V$			-1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 12V$			±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

- Note: 1. Pulse width limited by $T_{J(MAX)}$
 2. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
 3. Surface mounted on 1 in² copper pad of FR4 board

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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