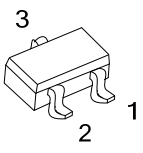
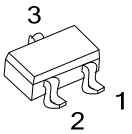
UT3403

Power MOSFET

-2.6 Amps, 30 Volts
P-CHANNEL POWER MOSFET



SOT-23



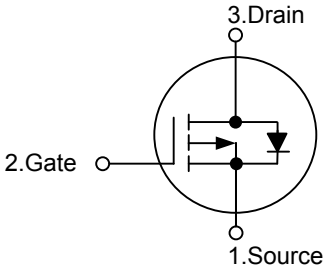
SOT-23-3
(JEDEC TO-236)

■ 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

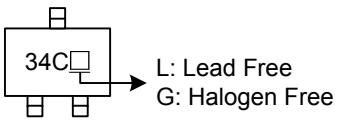


■ ORDERING INFORMATION

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

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

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_A = 25°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	°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.

■ THERMAL DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient (Note 3)	θ_{JA}		100	125	°C/W

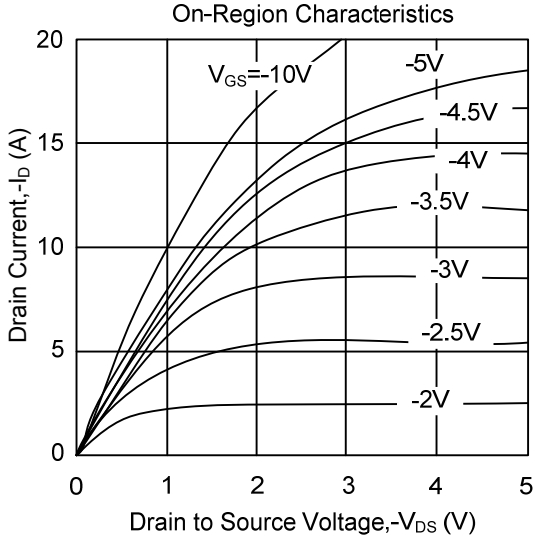
■ ELECTRICAL CHARACTERISTICS (T_J =25°C, unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250μA, 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}=±12V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS}, I_D=-250μA	-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	mΩ
		V_{GS}=-4.5V, I_D=-2A		128	180	mΩ
		V_{GS}=-2.5V, I_D=-1A		187	260	mΩ
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=6Ω, R_G =3Ω		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/μs		15.8	19	ns
Reverse Recovery Charge	Q_{RR}			8	12	nC

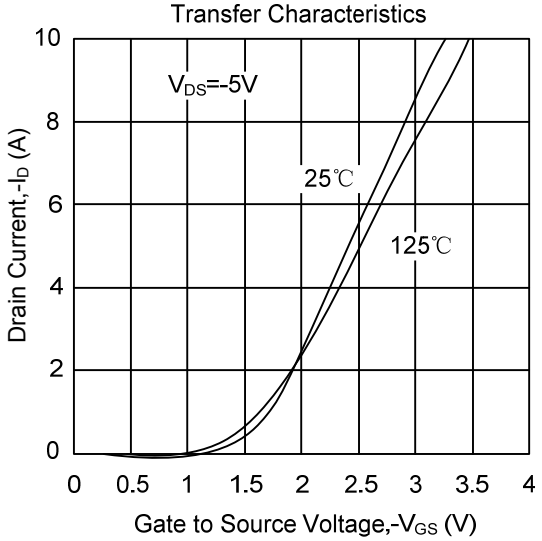
Note: 1. Pulse width limited by $T_{J(MAX)}$
2. Pulse width ≤300us, duty cycle ≤2%.
3. Surface mounted on 1 in^2 copper pad of FR4 board

■ TYPICAL CHARACTERISTICS

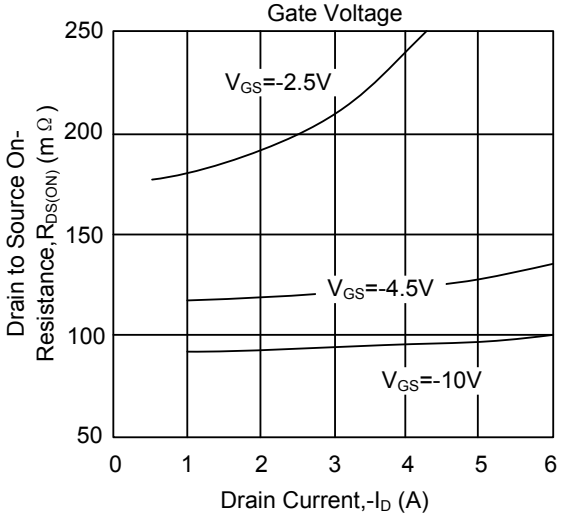
On-Region Characteristics



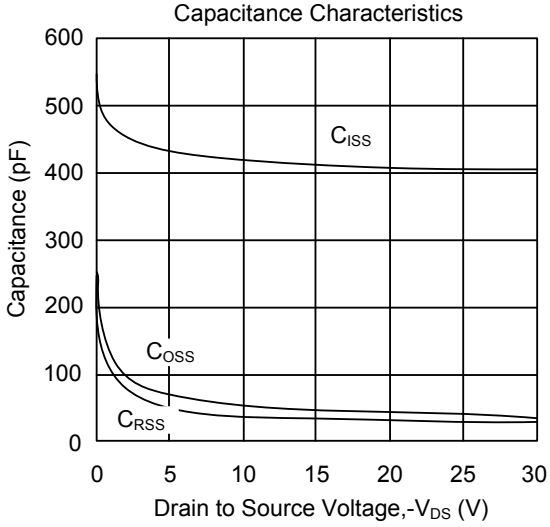
Transfer Characteristics



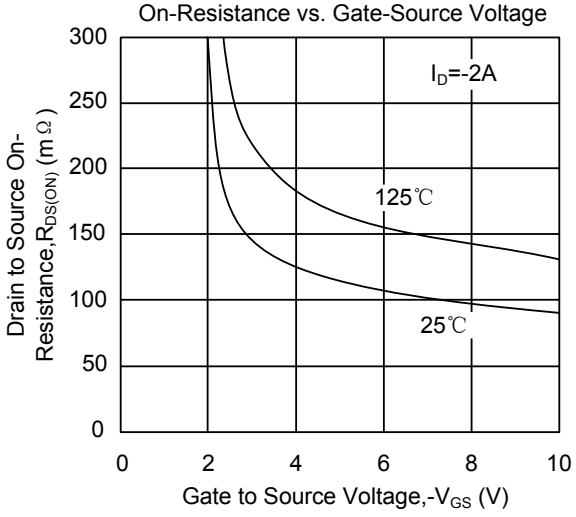
On-Resistance vs. Drain Current and Gate Voltage



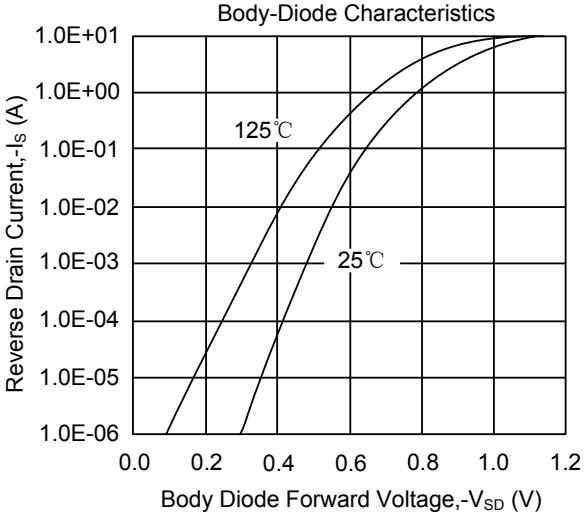
Capacitance Characteristics



On-Resistance vs. Gate-Source Voltage



Body-Diode Characteristics



■ TYPICAL CHARACTERISTICS(Cont.)