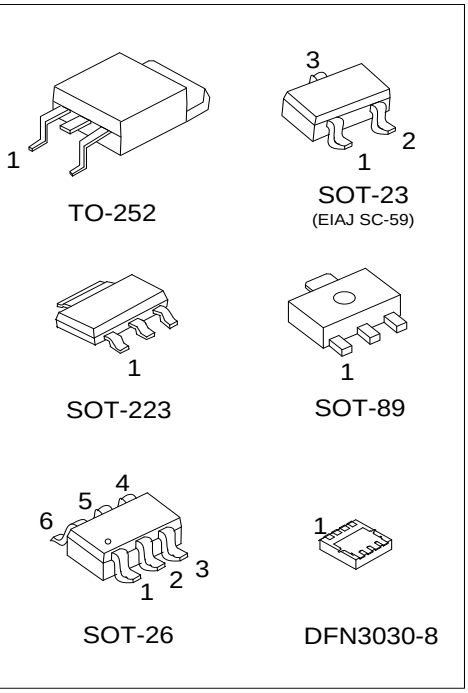
UT3N10

Power MOSFET

N-CHANNEL ENHANCEMENT MODE POWER MOSFET



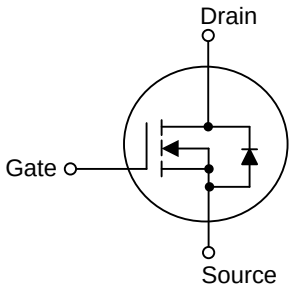
■ DESCRIPTION

The UTC **UT3N10** is an N-channel power MOSFET providing very low on-resistance. It has high efficiency and perfect cost-effectiveness. It can be generally applied in the commercial and industrial fields.

■ FEATURES

* $R_{DS(ON)} \leq 0.165\ \Omega$ @ V_{GS} =10V, I_D =3.0A
  $R_{DS(ON)} \leq 0.180\ \Omega$ @ V_{GS} =4.5V, I_D =2.0A
* Simple drive requirement

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UT3N10L-AA3-R	UT3N10G-AA3-R	SOT-223	G	D	S	-	-	-	-	-	Tape Reel
UT3N10L-AB3-R	UT3N10G-AB3-R	SOT-89	G	D	S	-	-	-	-	-	Tape Reel
UT3N10L-AE3-R	UT3N10G-AE3-R	SOT-23	G	S	D	-	-	-	-	-	Tape Reel
UT3N10L-AG6-R	UT3N10G-AG6-R	SOT-26	D	D	G	S	D	D	-	-	Tape Reel
UT3N10L-TN3-R	UT3N10G-TN3-R	TO-252	G	D	S	-	-	-	-	-	Tape Reel
UT3N10L-K08-3030-R	UT3N10G-K08-3030-R	DFN3030-8	S	S	S	G	D	D	D	D	Tape Reel

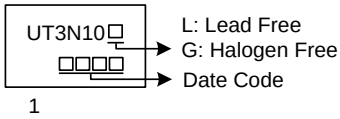
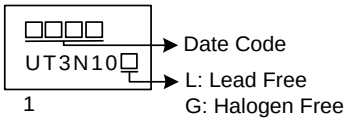
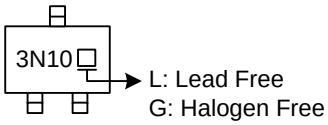
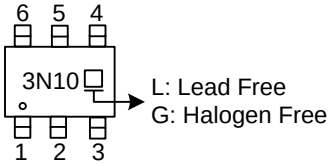
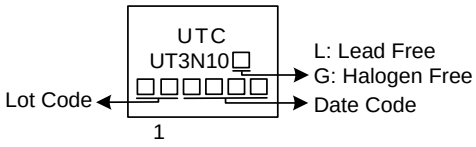
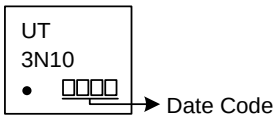
Note: Pin Assignment: G: Gate D: Drain S: Source

UT3N10G-AA3-R
(1)Packing Type
(2)Package Type
(3)Green Package

(1) R: Tape Reel
(2) AA3: SOT-223, AB3: SOT-89, AE3: SOT-23
AG6: SOT-26, TN3: TO-252
K08-3030: DFN3030-8
(3) G: Halogen Free and Lead Free, L: Lead Free

Copyright © 2020 Unisonic Technologies Co., Ltd

■ MARKING

SOT-223	SOT-89
	
SOT-23	**SOT-26**
	
TO-252	**DFN3030-8**
	

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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	100	V
Gate-Source Voltage		V_{GSS}	±20	V
Continuous Drain Current (V_{GS}=4.5V, T_A= 25°C) (Note 2)		I_D	3.0	A
Pulsed Drain Current (Note 3, 4)		I_{DM}	10	A
Power Dissipation (T_A= 25°C)	SOT-223	P_D	0.89	W
	SOT-89		0.55	W
	SOT-23 SOT-26		0.35	W
	TO-252		2	W
	DFN3030-8		0.96	W
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-55 ~ +150	°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. Surface mounted on 1 in^2 copper pad of FR4 board; 270°C/W when mounted on min. copper pad.
3. Repetitive Rating: Pulse width limited by maximum junction temperature.
4. Pulse width ≤300μs, duty cycle≤2%.

■ THERMAL DATA

PARAMETER		SYMBOL	RATING	UNIT
Junction to Ambient (Note)	SOT-223	θ_{JA}	140	°C/W
	SOT-89		180	°C/W
	SOT-23 SOT-26		350	°C/W
	TO-252		62.5	°C/W
	DFN3030-8		130	°C/W

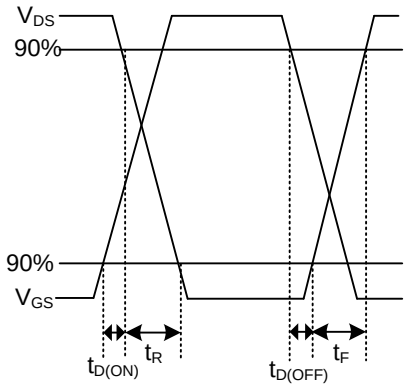
Note: Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

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

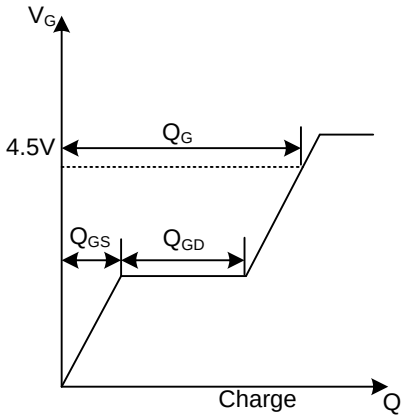
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} =0V, I_D =250μA	100			V
Drain-Source Leakage Current	I_{DSS}	V_{DS} =100V,V_{GS} =0V			10	μA
Gate-Source Leakage Current	I_{GSS}	V_{GS} =±20V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS} =V_{GS}, I_D =250μA	1.0		3.0	V
Drain to Source On-state Resistance	$R_{DS(ON)}$	V_{GS} =10V, I_D =3.0A			0.165	Ω
		V_{GS} =4.5V, I_D =2.0A			0.180	Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	V_{DS}=25V,V_{GS}=0V,f =1.0MHz		720		pF
Output Capacitance	C_{OSS}			45		pF
Reverse Transfer Capacitance	C_{RSS}			36		pF
SWITCHING PARAMETERS						
Total Gate Charge (Note)	Q_G	V_{GS} =10V, V_{DS}=80V, I_D =3A		20		nC
Gate Source Charge	Q_{GS}			3.2		nC
Gate Drain Charge	Q_{GD}			4.2		nC
Turn-ON Delay Time (Note)	$t_{D(ON)}$	V_{GS}=10V, V_{DS}=50V, I_D=3A, R_G =25Ω		8		ns
Turn-ON Rise Time	t_R			18		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			75		ns
Turn-OFF Fall-Time	t_F			30		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage (Note)	V_{SD}	I_S =1.2A, V_{GS} =0V			1.2	V
Reverse Recovery Time	t_{rr}	I_S=3A,V_{GS}=0V, dI/dt=100A/μs		50		ns
Reverse Recovery Charge	Q_{rr}			140		nC

Note: Pulse width ≤300μs, duty cycle≤2%.

■ TEST WAVEFORMS



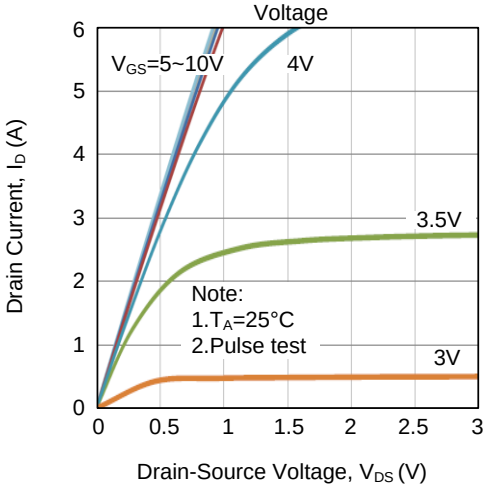
Switching Time Waveform



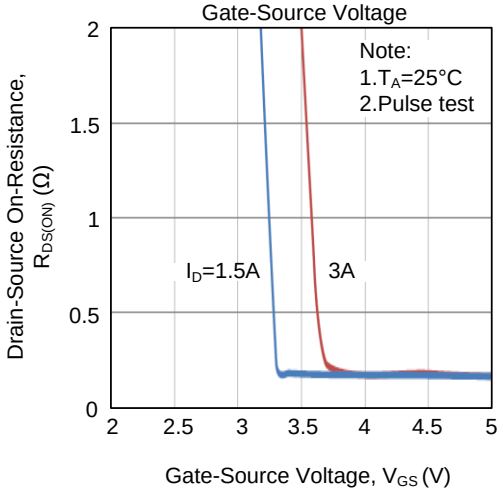
Gate Charge Waveform

■ TYPICAL CHARACTERISTICS

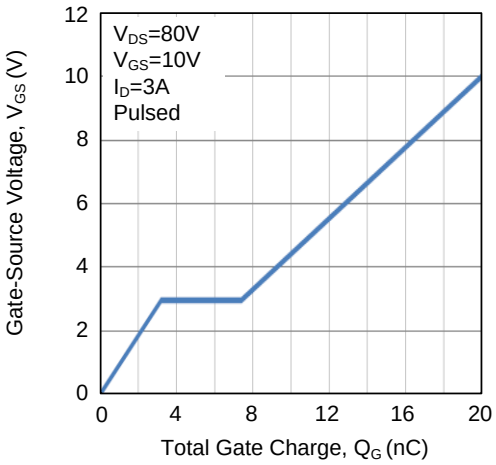
Drain Current vs. Drain-Source Voltage



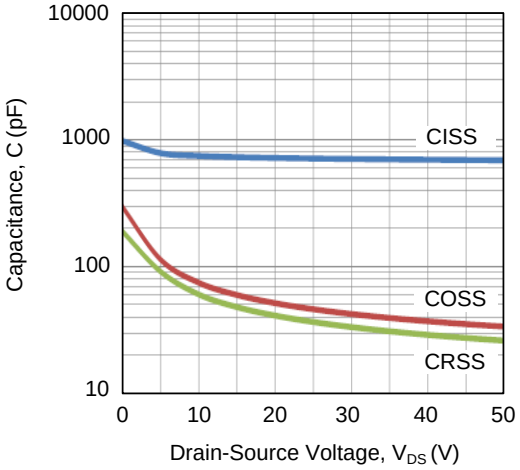
Drain-Source On-Resistance vs. Gate-Source Voltage



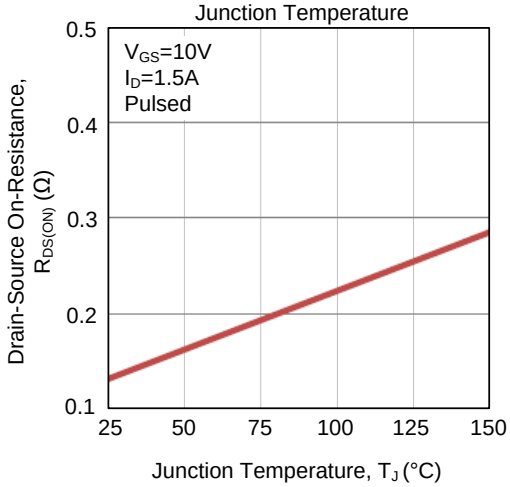
Gate Charge Characteristics



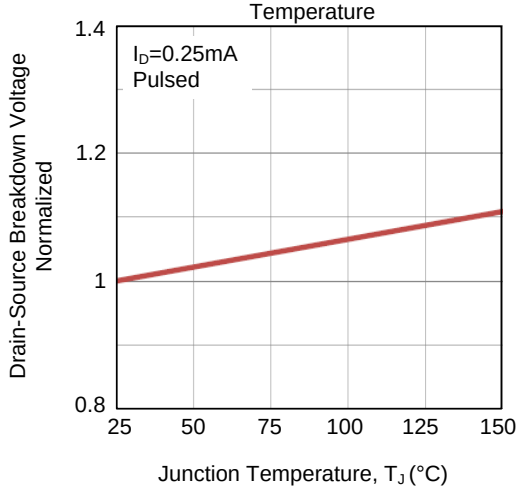
Capacitance Characteristics



Drain-Source On-Resistance vs. Junction Temperature

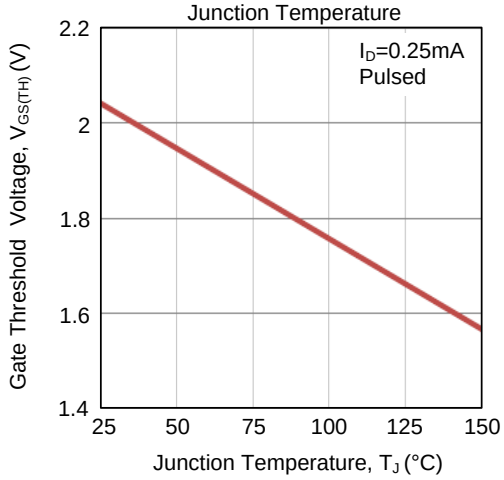


Breakdown Voltage vs. Junction Temperature

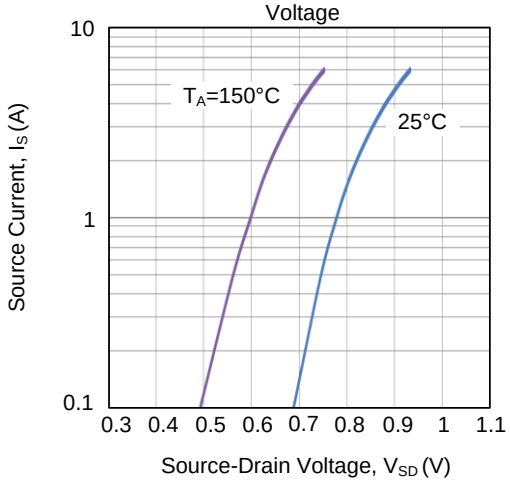


■ TYPICAL CHARACTERISTICS (Cont.)

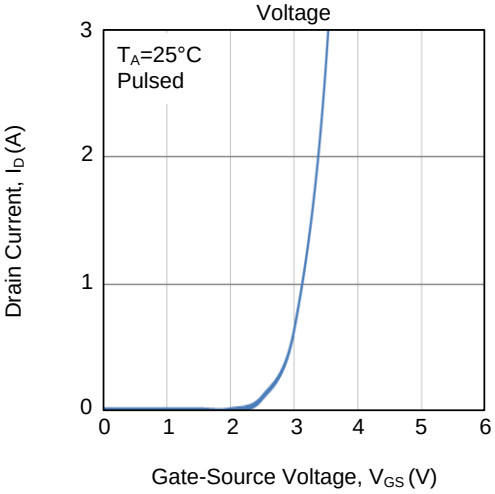
Gate Threshold Voltage vs. Junction Temperature



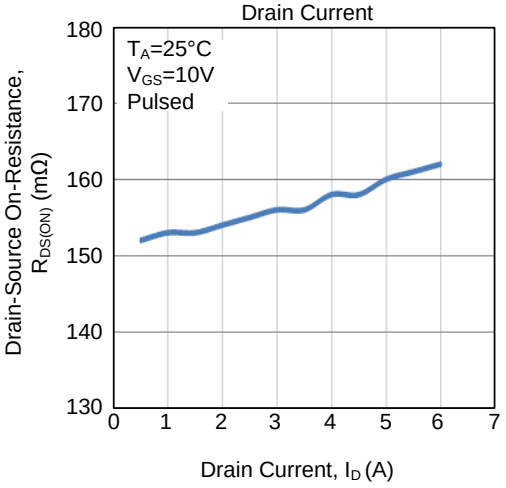
Source Current vs. Source-Drain Voltage



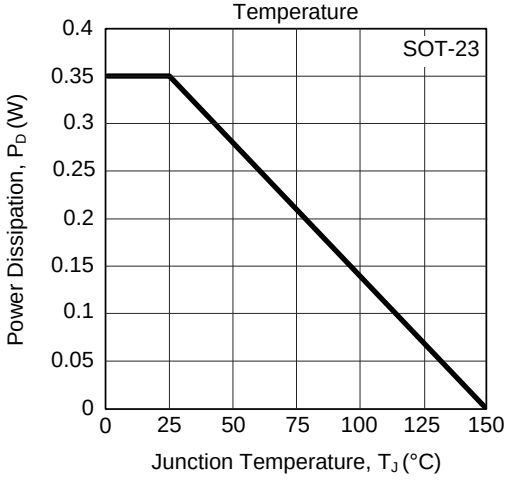
Drain Current vs. Gate-Source Voltage



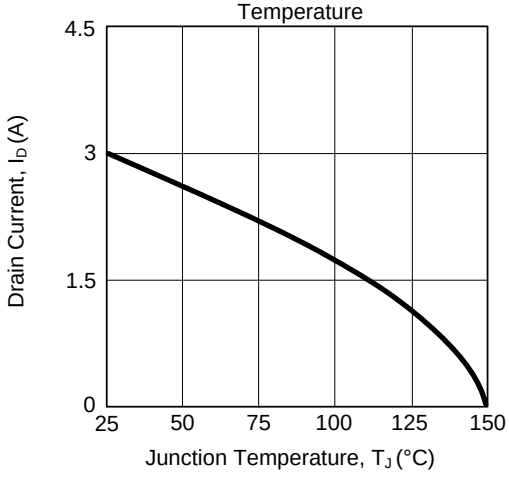
Drain-Source On-Resistance vs. Drain Current



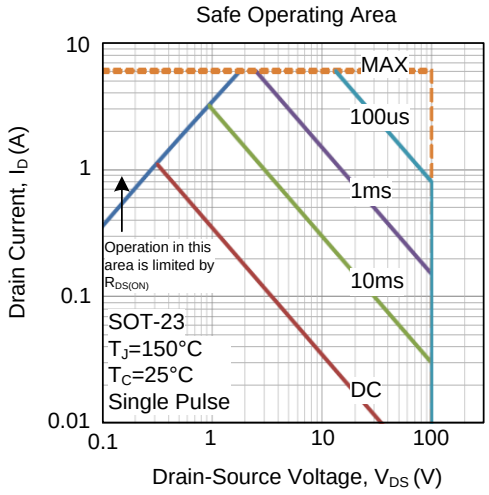
Power Dissipation vs. Junction Temperature



Drain Current vs. Junction Temperature



■ TYPICAL CHARACTERISTICS (Cont.)



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET ***category:***

Click to view products by Unisonic ***manufacturer:***

Other Similar products are found below :

IRFD120 JANTX2N5237 BUK455-60A/B MIC4420CM-TR VN1206L NDP4060 SI4482DY IPS70R2K0CEAKMA1 SQD23N06-31L-GE3 TK16J60W,S1VQ(O 2SK2614(TE16L1,Q) DMN1017UCP3-7 DMN1053UCP4-7 SQJ469EP-T1-GE3 NTE2384 DMC2700UDMQ-7 DMN2080UCB4-7 DMN61D9UWQ-13 US6M2GTR DMN31D5UDJ-7 DMP22D4UFO-7B DMN1006UCA6-7 DMN16M9UCA6-7 STF5N65M6 IRF40H233XTMA1 STU5N65M6 DMN6022SSD-13 DMN13M9UCA6-7 DMTH10H4M6SPS-13 DMN2990UFB-7B IPB80P04P405ATMA2 2N7002W-G MCAC30N06Y-TP MCQ7328-TP BXP7N65D BXP4N65F AOL1454G WMJ80N60C4 BXP2N20L BXP2N65D BXT1150N10J BXT1700P06M TSM60NB380CP ROG RQ7L055BGTCR DMNH15H110SK3-13 SLF10N65ABV2 BSO203SP BSO211P IPA60R230P6 IPA60R460CE