



UTM2513

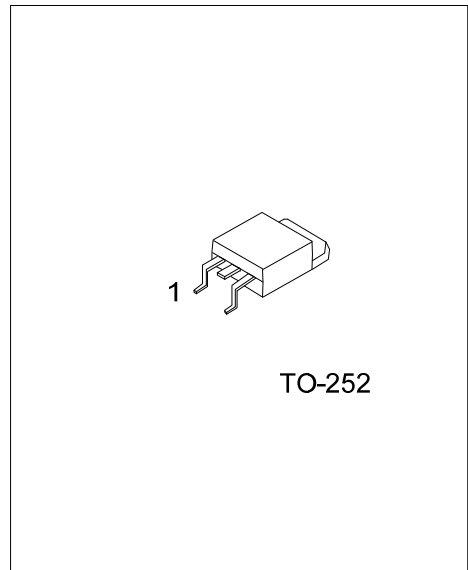
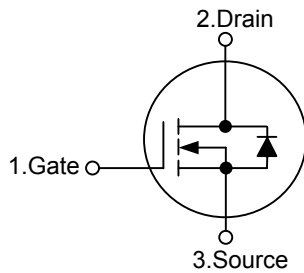
Power MOSFET

N-CHANNEL ENHANCEMENT MODE

FEATURES

- * $R_{DS(ON)} = 10.5m\Omega$ (typ.) @ $V_{GS} = 10 V$
- * $R_{DS(ON)} = 16m\Omega$ (typ.) @ $V_{GS} = 4.5 V$
- * Low capacitance
- * Optimized gate charge
- * Fast switching capability
- * Avalanche energy specified

SYMBOL



TO-252

Lead-free: UTM2513L
Halogen-free: UTM2513G

ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free Plating	Halogen Free		1	2	3	
UTM2513-TN3-R	UTM2513L-TN3-R	UTM2513G-TN3-R	TO-252	G	D	S	Tape Reel
UTM2513-TN3-T	UTM2513L-TN3-T	UTM2513G-TN3-T	TO-252	G	D	S	Tube

<p>UTM2513L-TN3-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Plating</p>	<p>(1) R: Tape Reel, T: Tube</p> <p>(2) TN3: TO-252</p> <p>(3) G: Halogen Free, L: Lead Free Plating, Blank: Pb/Sn</p>
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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}	25	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	I_D	40	A
Pulsed Drain Current	I_{DM}	90	A
Power Dissipation	P_D	50	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

Note: 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.

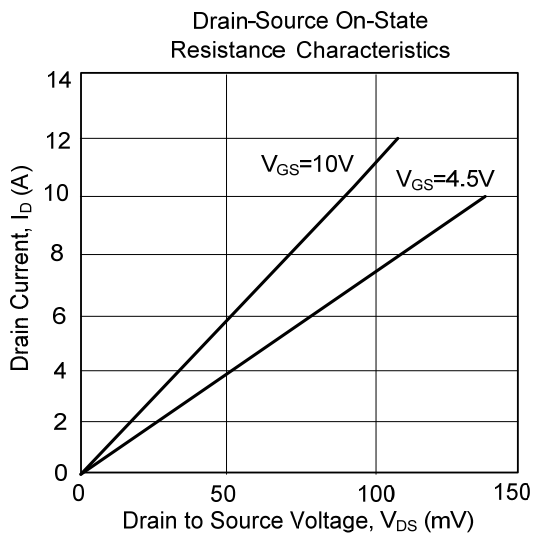
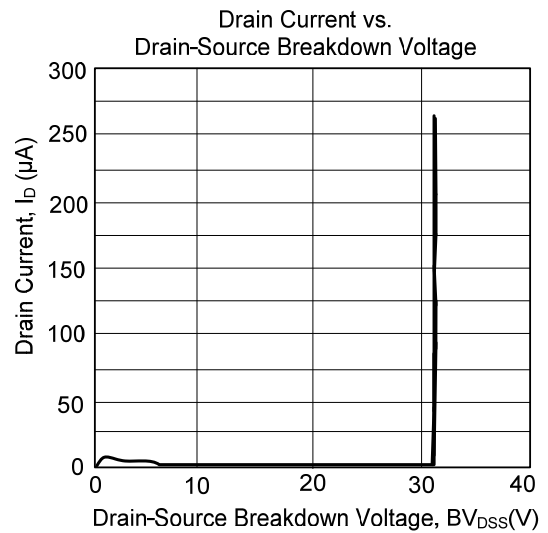
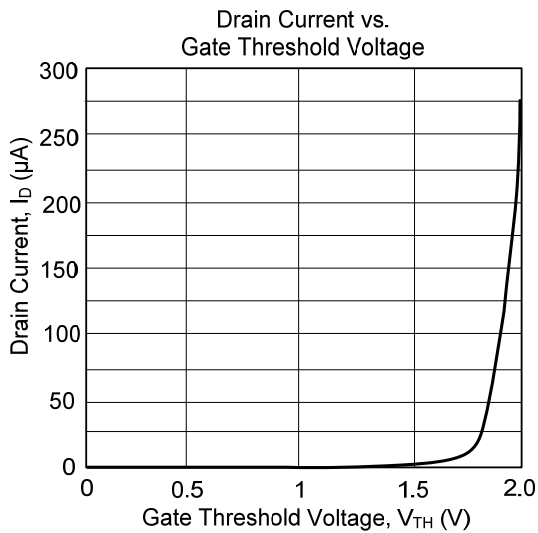
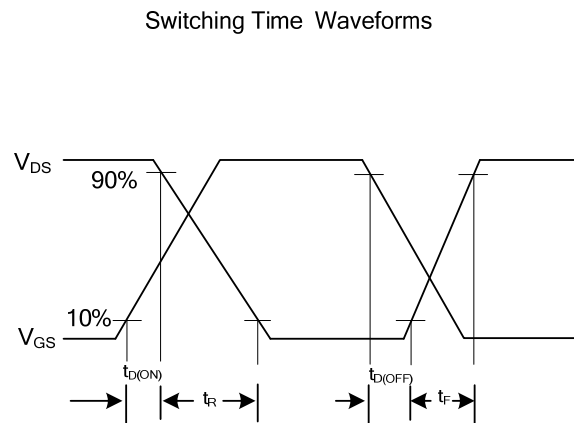
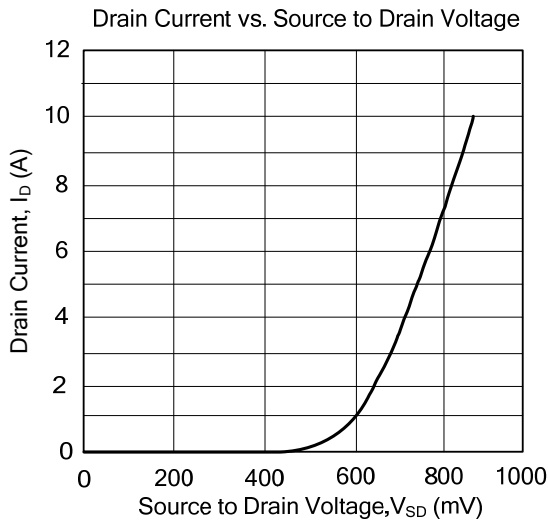
2. Pulse width limited by $T_{J(MAX)}$

■ 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}	$V_{GS}=0V, I_{DS}=250\mu A$	25			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=24V, V_{GS}=0V$			1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_{DS}=250\mu A$	1.30	1.80	2.50	V
Drain-Source On-State Resistance(Note)	$R_{DS(ON)}$	$V_{GS}=10V, I_{DS}=12A$		10.5	13	m Ω
		$V_{GS}=4.5V, I_{DS}=10A$		16	23	
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{ISS}	$V_{DS}=15V, V_{GS}=0V, f=1.0MHz$		1560		pF
Output Capacitance	C_{OSS}			345		pF
Reverse Transfer Capacitance	C_{RSS}			245		pF
SWITCHING CHARACTERISTICS						
Turn-ON Delay Time (Note)	$t_{D(ON)}$	$I_{DS}=1A, V_{DD}=15V, R_G=3\Omega,$		30	35	ns
Turn-ON Rise Time	t_R			60	67	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			272	285	ns
Turn-OFF Fall Time	t_F			168	172	ns
Total Gate Charge (Note)	Q_G	$V_{DS}=15V, V_{GS}=10V, I_{DS}=10A$		28	38	nC
Gate-Source Charge	Q_{GS}			3.6		nC
Gate-Drain Charge	Q_{GD}			8.4		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage(Note)	V_{SD}	$I_{SD}=10A, V_{GS}=0V$		0.9	1.3	V

Note: Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$

TYPICAL CHARACTERISTICS



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