



UTM3023

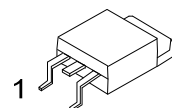
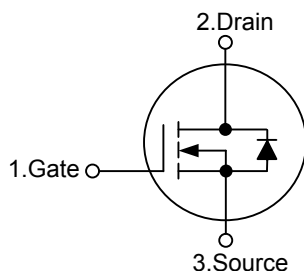
Power MOSFET

N-CHANNEL ENHANCEMENT MODE

■ FEATURES

- * $R_{DS(ON)} < 20m\Omega$ @ $V_{GS} = 10V$, $I_{DS} = 20A$
 $R_{DS(ON)} < 28m\Omega$ @ $V_{GS} = 5V$, $I_{DS} = 10A$
- * Low capacitance
- * Optimized gate charge
- * Fast switching capability
- * Avalanche energy specified

■ SYMBOL



TO-252

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTM3023L-TN3-T	UTM3023G-TN3-T	TO-252	G	D	S	Tube
UTM3023L-TN3-R	UTM3023G-TN3-R	TO-252	G	D	S	Tape Reel

UTM3023L-TN3-T		(1)Packing Type	(1) T: Tube, R: Tape Reel
		(2)Package Type	(2) TN3: TO-252
		(3)Lead Plating	(3) L: Lead Free, G: Halogen Free

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

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	± 20	
Maximum Continuous Drain Current	I_D	30	A
Maximum Pulsed Drain Current	I_{DM}	70	
Maximum Power Dissipation	P_D	62.5	W
Maximum Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	$-55 \sim +150$	

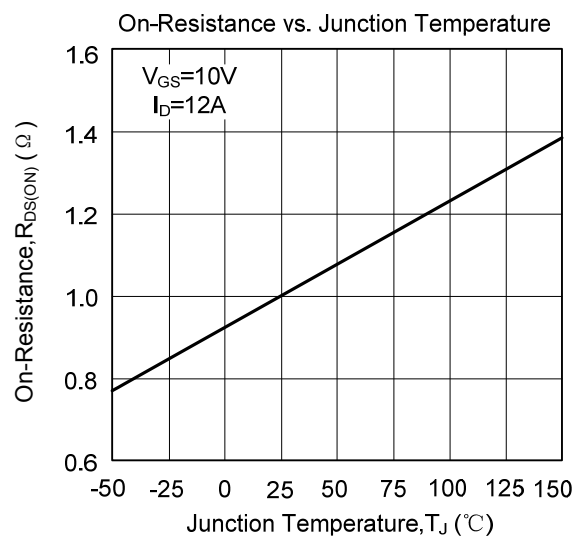
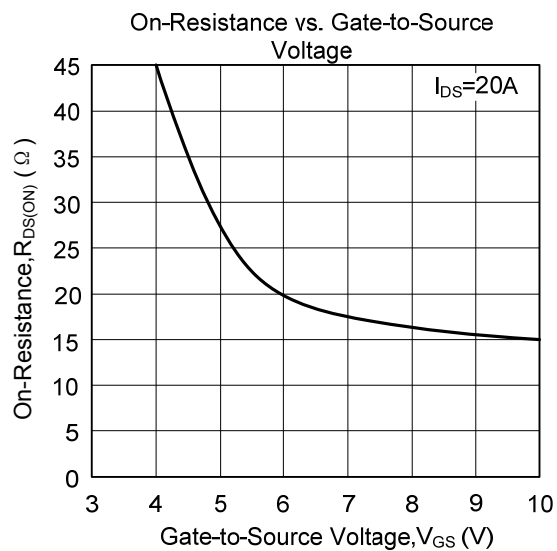
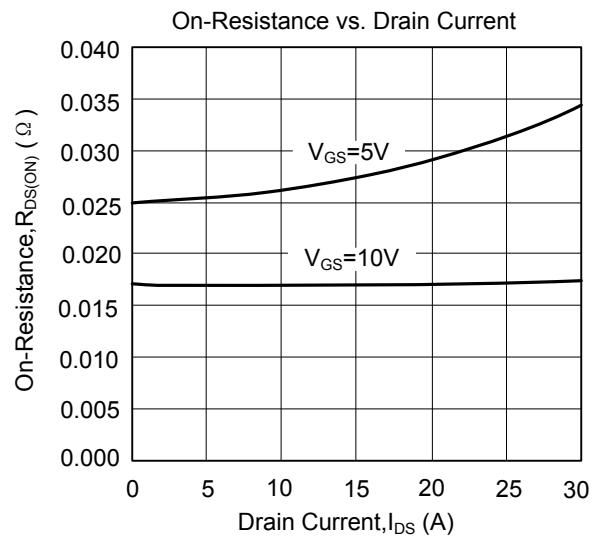
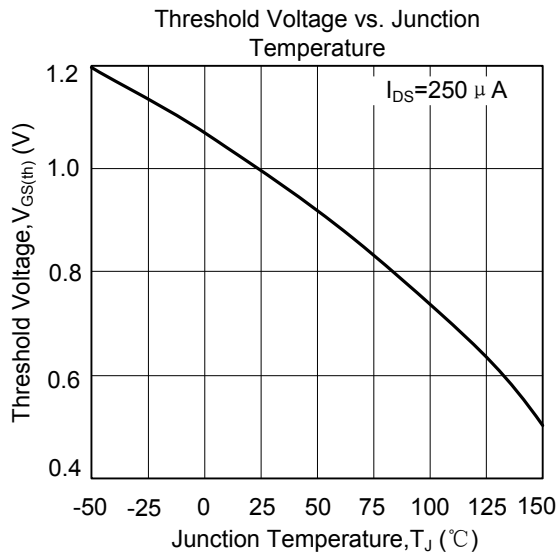
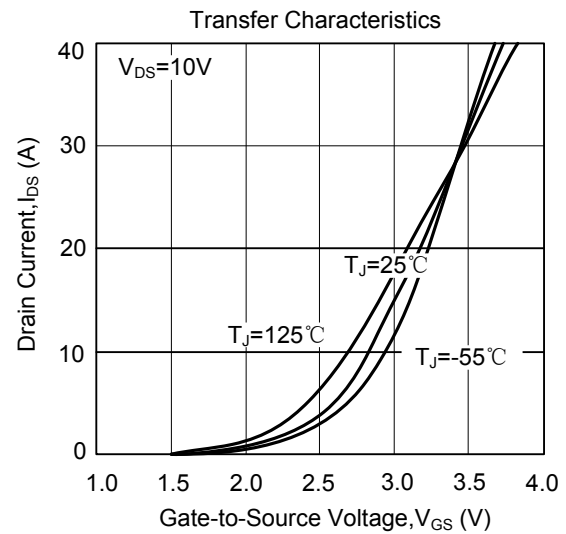
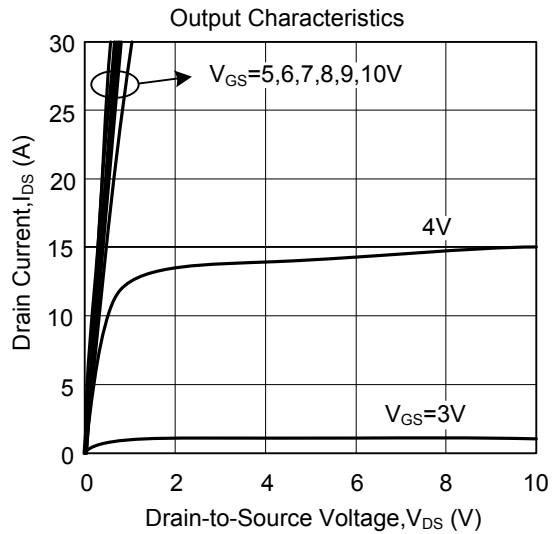
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

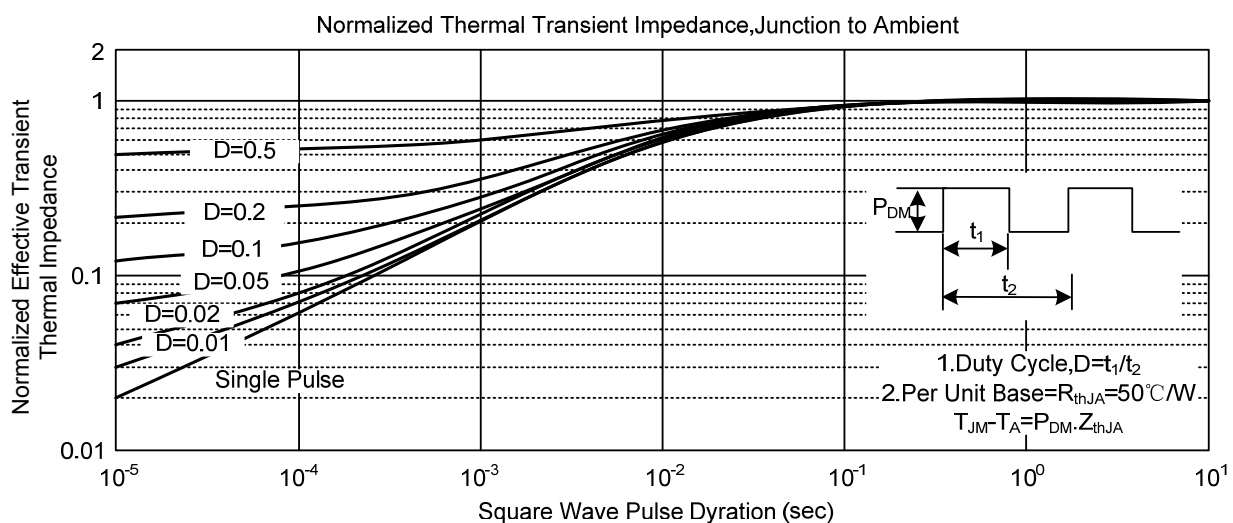
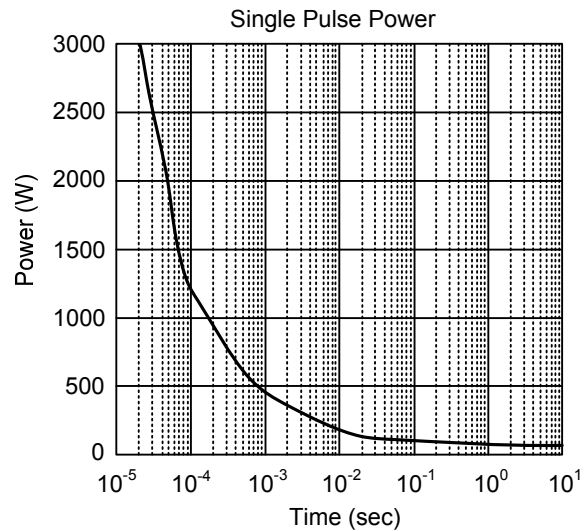
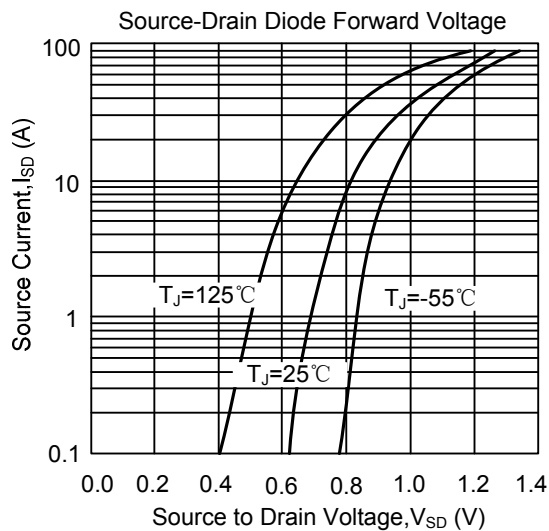
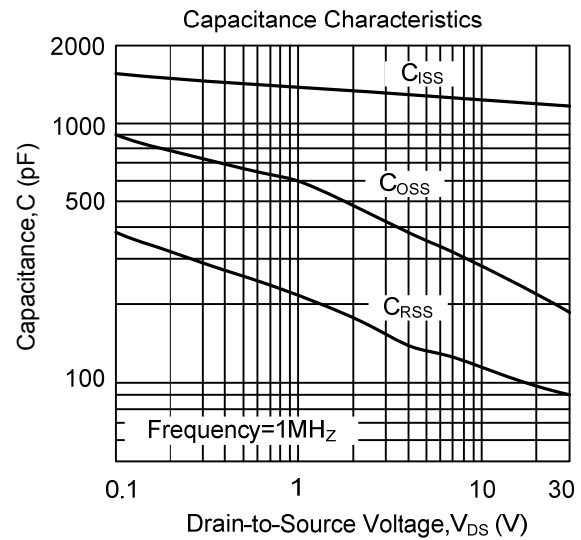
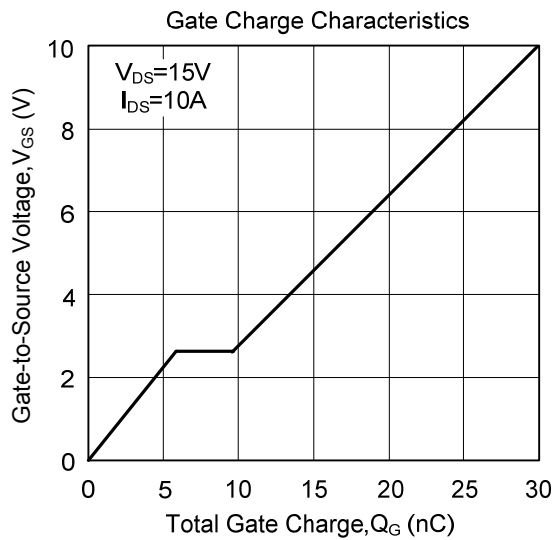
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0 V, I _{DS} =250μA	30			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =24 V, V _{GS} =0 V			1	μA
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0 V, V _{GS} =±20V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _{DS} =250 μA	1	1.5	2	V
Drain-Source On-State Resistance(Note 2)	R _{DS(ON)}	V _{GS} =10 V, I _{DS} =20 A		15	20	mΩ
		V _{GS} =5 V, I _{DS} =10 A		22	28	
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{ISS}	V _{DS} =15 V, V _{GS} =0V, f=1.0MHz		1200		pF
Output Capacitance	C _{OSS}			220		
Reverse Transfer Capacitance	C _{RSS}			100		
SWITCHING CHARACTERISTICS						
Turn-ON Delay Time (Note 2)	t _{D(ON)}	I _{DS} =2 A, V _{DD} =15 V, R _G =6 Ω, V _{GEN} =10V		11	18	ns
Turn-ON Rise Time	t _R			17	26	
Turn-OFF Delay Time	t _{D(OFF)}			37	54	
Turn-OFF Fall Time	t _F			20	30	
Total Gate Charge (Note 2)	Q _G	V _{DS} =15V, V _{GS} =5V, I _{DS} =10A		15	20	nC
Gate-Source Charge	Q _{GS}			5.8		
Gate-Drain Charge	Q _{GD}			3.8		
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage(Note2)	V _{SD}	I _{SD} =15A, V _{GS} =0V		0.7	1.3	V

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 FR4 Board, $t \leq 10\text{ sec}$.

TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS(Cont.)



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