



UTD484

Power MOSFET

N-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

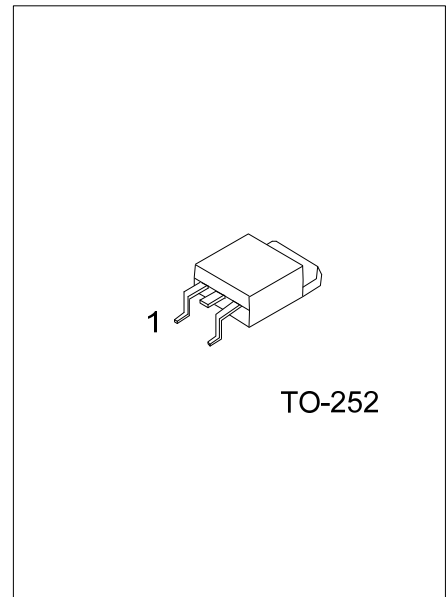
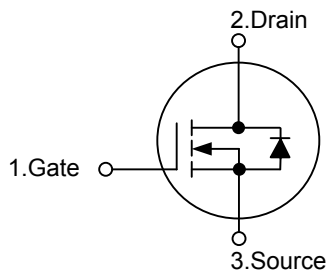
DESCRIPTION

The **UTD484** uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with low gate voltages. This device is suitable for use as a load switch or in PWM applications.

FEATURES

- * $R_{DS(ON)} = 15m\Omega$ @ $V_{GS} = 10V$
- * Low capacitance
- * Low gate charge
- * Fast switching capability
- * Avalanche energy specified

SYMBOL



*Pb-free plating product number: UTD484L

ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
UTD484-TN3-R	UTD484L-TN3-R	TO-252	G	D	S	Tape Reel
UTD484-TN3-T	UTD484L-TN3-T	TO-252	G	D	S	Tube

UTD484L-TN3-R		(1)Packing Type	(1) R: Tape Reel, T: Tube
		(2)Package Type	(2) TN3: TO-252
		(3)Lead Plating	(3) L: Lead Free Plating, Blank: Pb/Sn

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

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	25	A
Pulsed Drain Current(Note 1)	I_{DM}	80	A
Avalanche Current(Note 1)	I_{AR}	15	A
Repetitive avalanche energy $L=0.3\text{mH}$ (Note 1)	E_{AR}	33	mJ
Power Dissipation	P_D	50	W
		2.1	
Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +175	$^\circ\text{C}$

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 $T_{J(MAX)}$

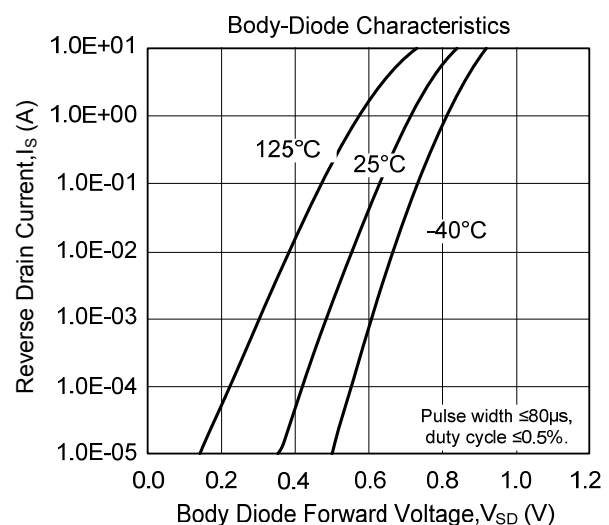
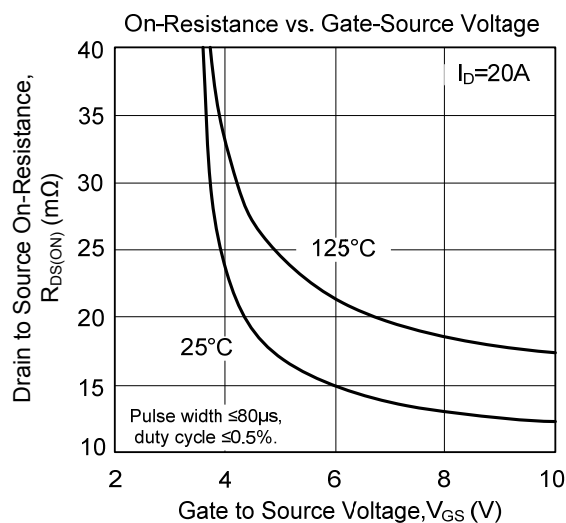
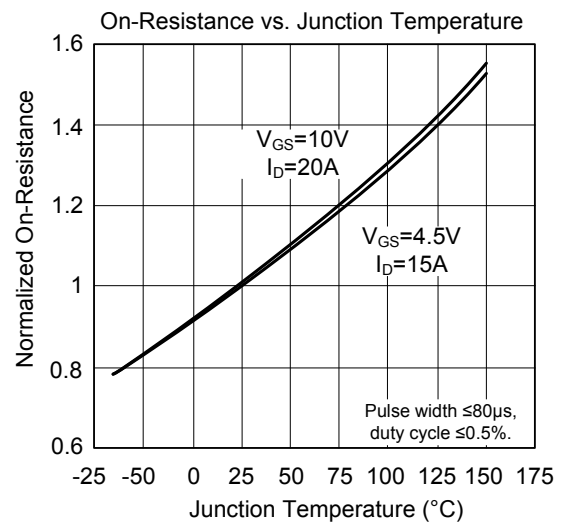
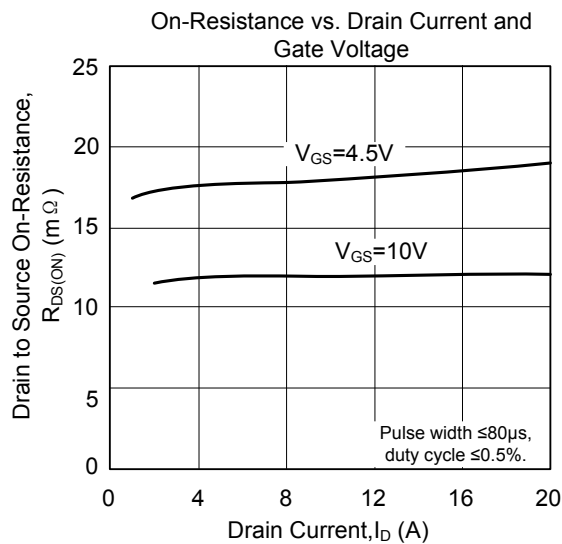
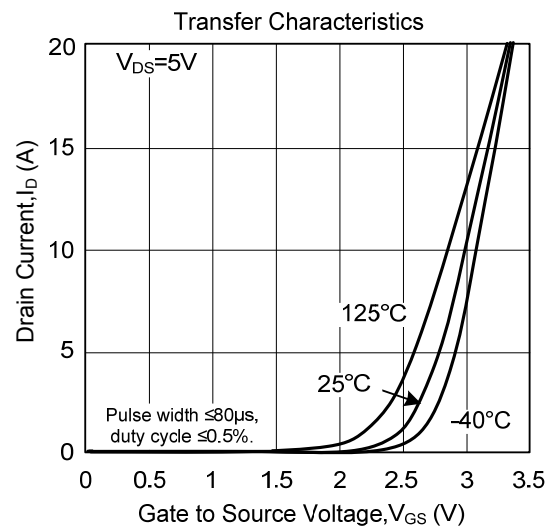
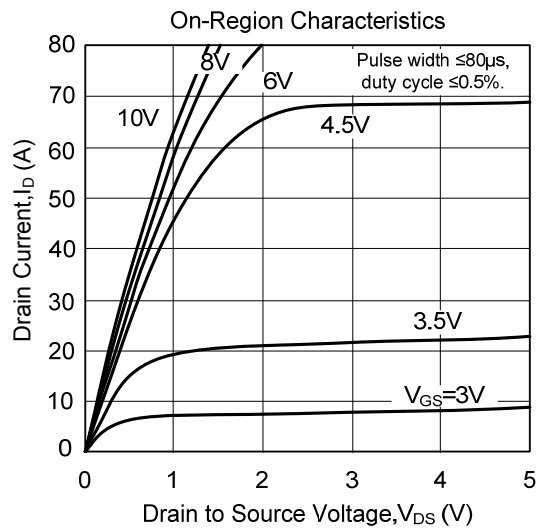
■ THERMAL DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction-to-Ambient	θ_{JA}		55	60	$^\circ\text{C/W}$
Junction-to-Case	θ_{JC}		2.3	3	

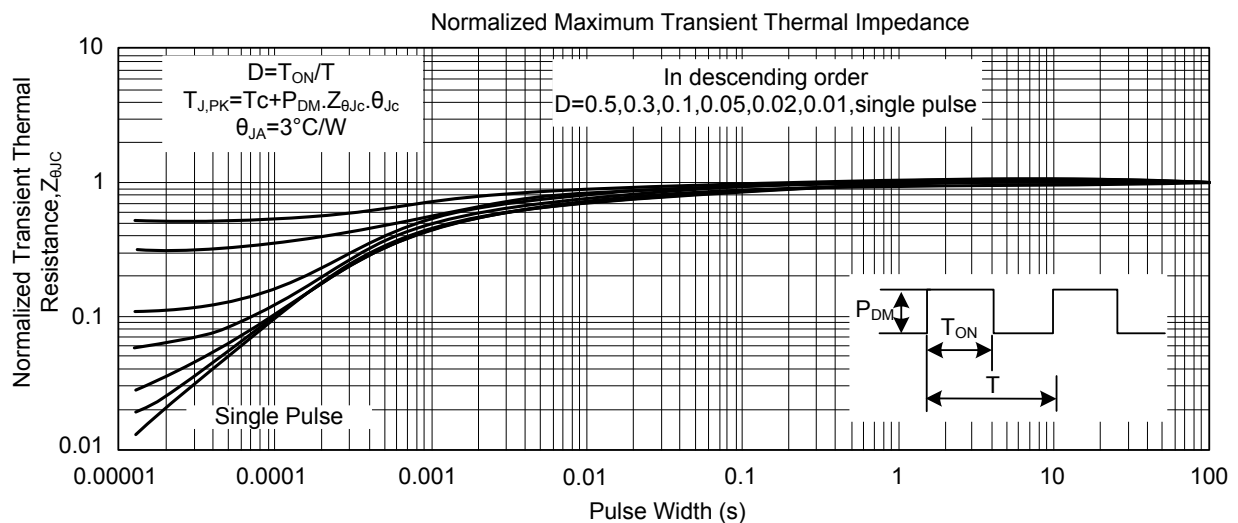
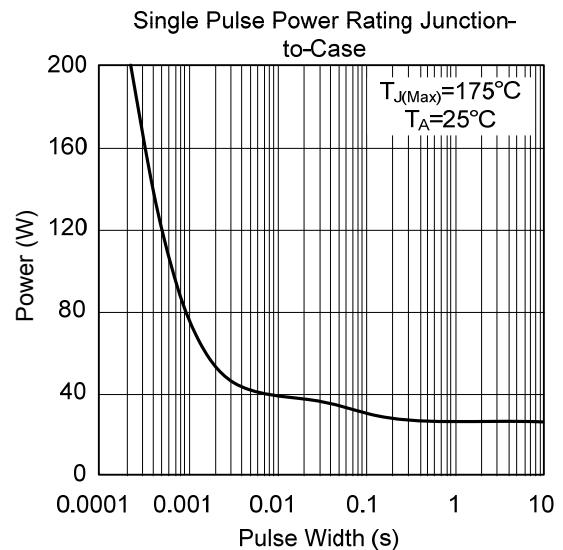
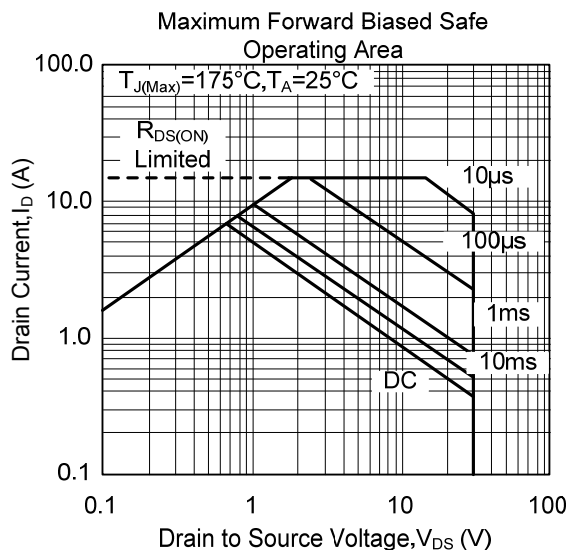
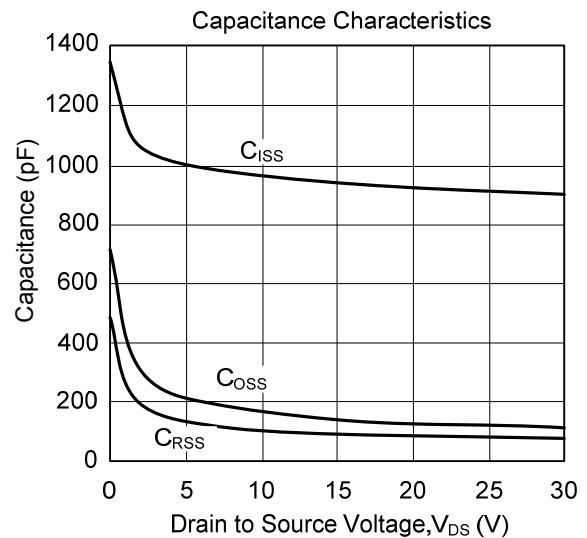
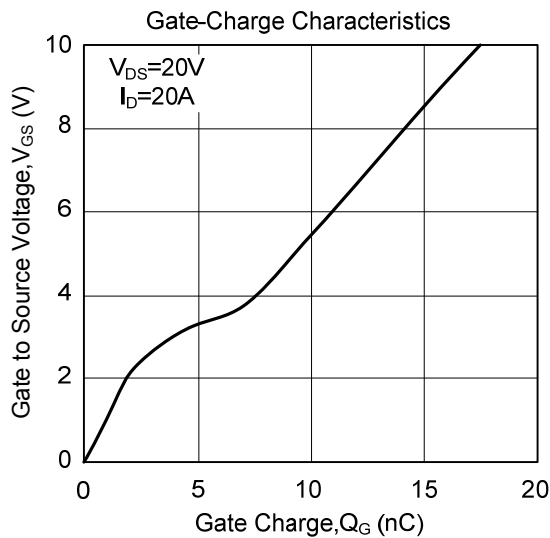
■ ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0 V, I _D =250 μA	30			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =24V, V _{GS} =0 V			1	μA
Gate-Body 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 _D =250 μA	1	1.5	2.5	V
On State Drain Current	I _{D(ON)}	V _{DS} =5 V, V _{GS} =10V	80			A
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10 V, I _D =20 A		12.1	15	mΩ
		V _{GS} =4.5 V, I _D =15 A		18.5	23	
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =15 V, V _{GS} =0V, f=1MHz		938	1220	pF
Output Capacitance	C _{OSS}			142		
Reverse Transfer Capacitance	C _{RSS}			99		
SWITCHING PARAMETERS						
Total Gate Charge	Q _G	V _{DS} =15V, V _{GS} =10V, I _D =20 A		17.5	21	nC
Gate Source Charge	Q _{GS}			3		
Gate Drain Charge	Q _{GD}			4.1		
Turn-ON Delay Time	t _{D(ON)}	V _{GS} =10V,V _{DS} =15V,R _L =0.75Ω, R _{GEN} =3Ω		5		ns
Turn-ON Rise Time	t _R			12		
Turn-OFF Delay Time	t _{D(OFF)}			19		
Turn-OFF Fall-Time	t _F			6		
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Diode Forward Voltage	V _{SD}	I _S =1A,V _{GS} =0V		0.71	1	V
Maximum Body-Diode Continuous Current	I _S				21	A
Body Diode Reverse Recovery Time	t _{RR}	I _F =20 A, dI/dt=100A/μs		19	21	ns
Body Diode Reverse Recovery Charge	Q _{RR}			10	12	nC

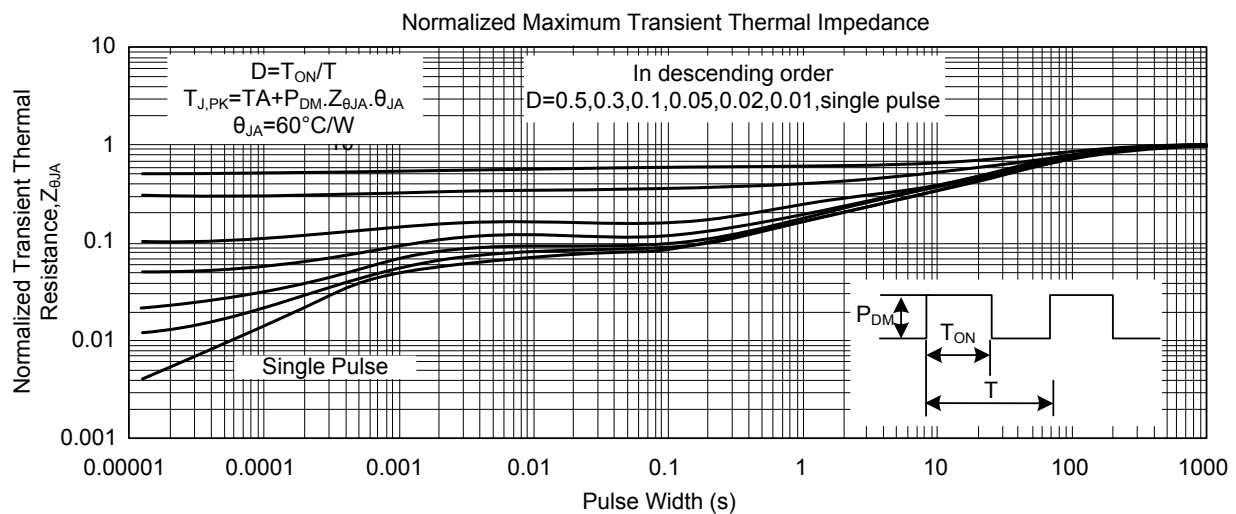
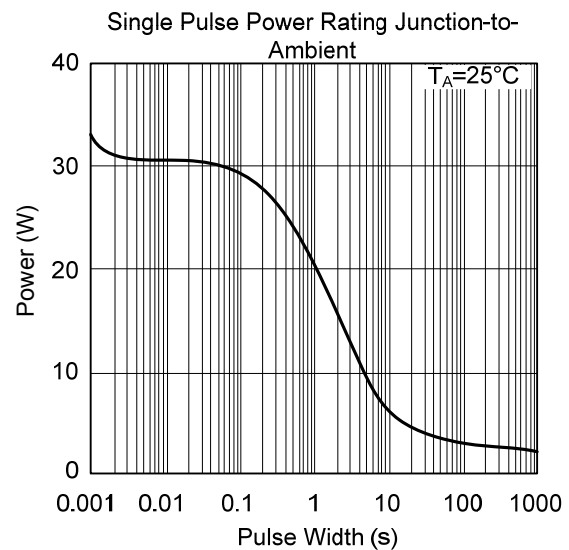
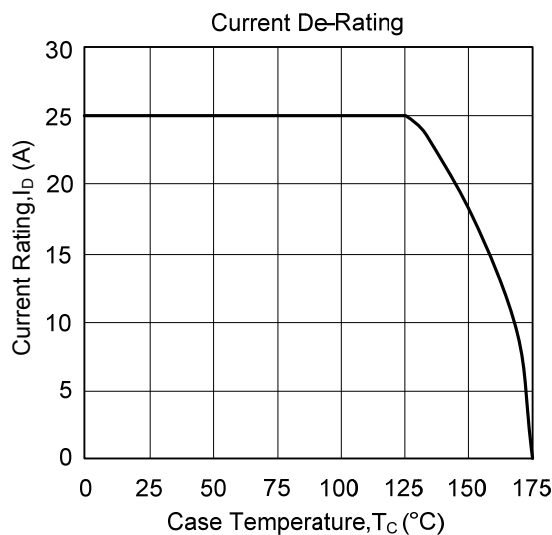
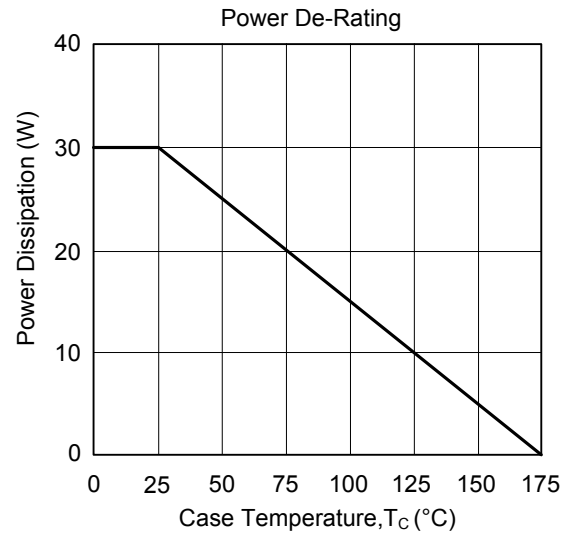
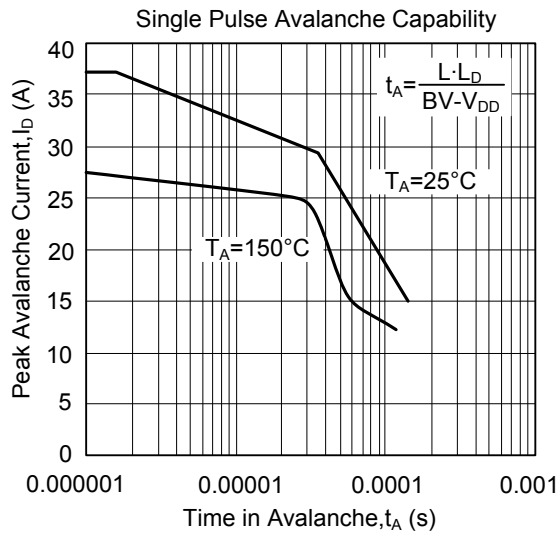
■ TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS(Cont.)



TYPICAL CHARACTERISTICS(Cont.)



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