



UTT25P10

Power MOSFET

25A, 100V P-CHANNEL POWER MOSFET

■ DESCRIPTION

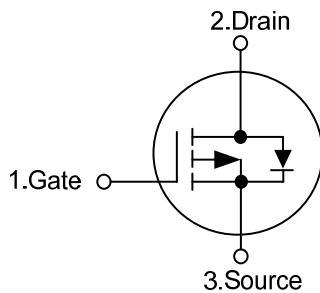
The UTC **UTT25P10** is a P-channel power MOSFET using UTC's advanced technology to provide the customers with high switching speed and a minimum on-state resistance, and it can also withstand high energy in the avalanche.

This UTC **UTT25P10** is suitable for motor drivers, switching regulators, converters and relay drivers, etc.

■ FEATURES

- * $R_{DS(ON)} < 0.15\Omega @ V_{GS} = -10V, I_D = -25A$
- * High Switching Speed

■ SYMBOL

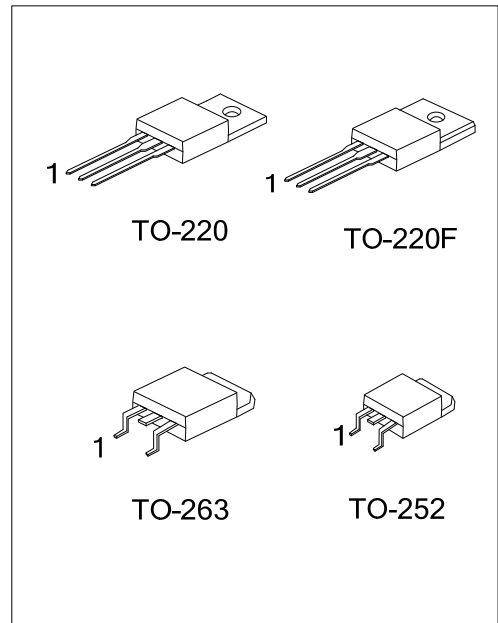


■ ORDERING INFORMATION

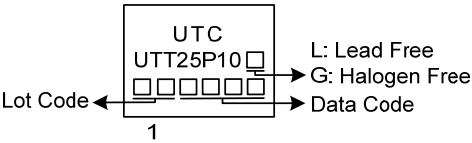
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT25P10L-TA3-T	UTT25P10G-TA3-T	TO-220	G	D	S	Tube
UTT25P10L-TF3-T	UTT25P10G-TF3-T	TO-220F	G	D	S	Tube
UTT25P10L-TN3-R	UTT25P10G-TN3-R	TO-252	G	D	S	Tape Reel
UTT25P10L-TQ2-T	UTT25P10G-TQ2-T	TO-263	G	D	S	Tube
UTT25P10L-TQ2-R	UTT25P10G-TQ2-R	TO-263	G	D	S	Tape Reel

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

<p>UTT25P10L-TA3-T</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Green Package</p>	<p>(1) T: Tube, R: Tape Reel</p> <p>(2) TA3: TO-220, TF3: TO-220F, TN3: TO-252, TQ2: TO-263</p> <p>(3) L: Lead Free, G: Halogen Free and Lead Free</p>
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MARKING



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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage (Note 2)		V _{DSS}	-100	V
Drain-Gate Voltage (R _{GS} =20kΩ)		V _{DGR}	-100	V
Gate-Source Voltage		V _{GSS}	±20	V
Drain Current	Continuous	I _D	-25	A
	Pulsed (Note 2)	I _{DM}	-60	A
Single Pulsed Avalanche Energy (Note 3)		E _{AS}	70	mJ
Power Dissipation	TO-220/TO-263	P _D	100	W
	TO-220F		2	
	TO-252		50	
Junction Temperature		T _J	-55~+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. Repetitive rating: pulse width limited by maximum junction temperature.

3. L = 0.35mH, I_{AS} = 20A, V_{DD} = 50V, R_G = 25Ω, Starting T_J = 25°C

■ THERMAL CHARACTERISTICS

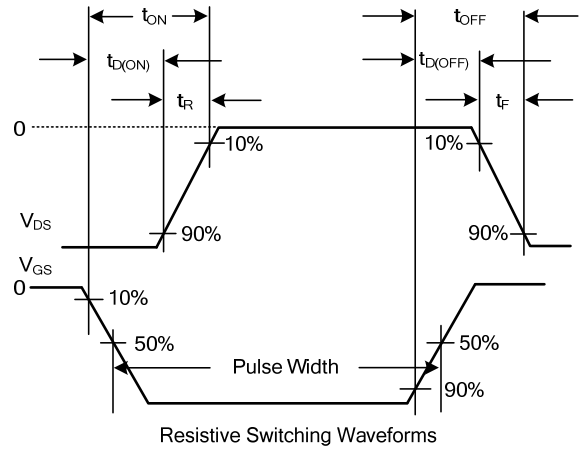
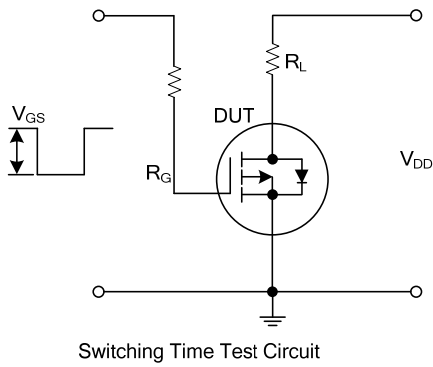
PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Case	TO-220/TO-263	θ _{JC}	0.83	°C/W
	TO-220F		4.5	
	TO-252		2.5	

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

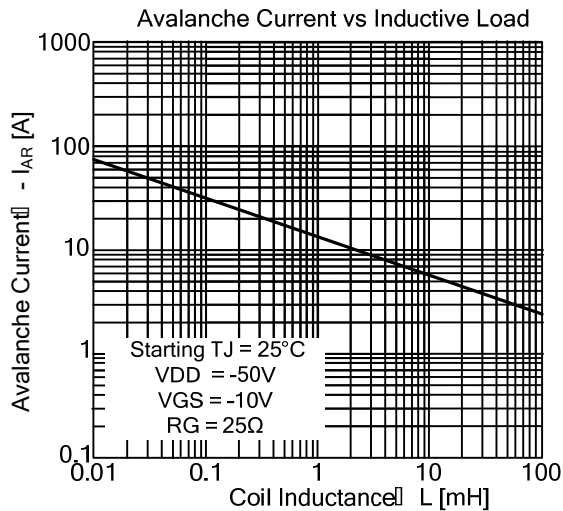
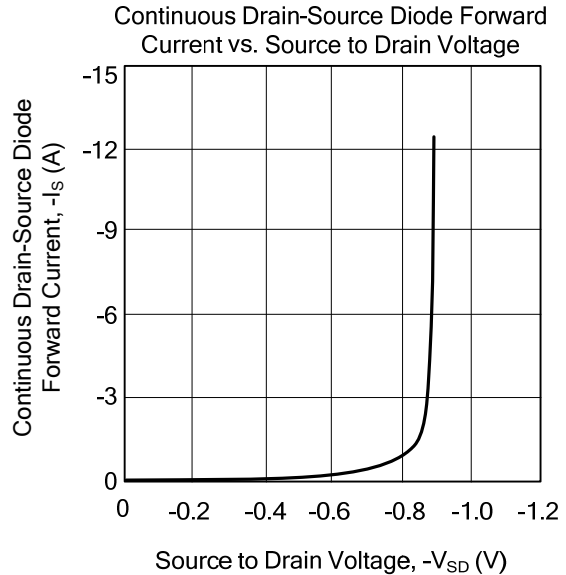
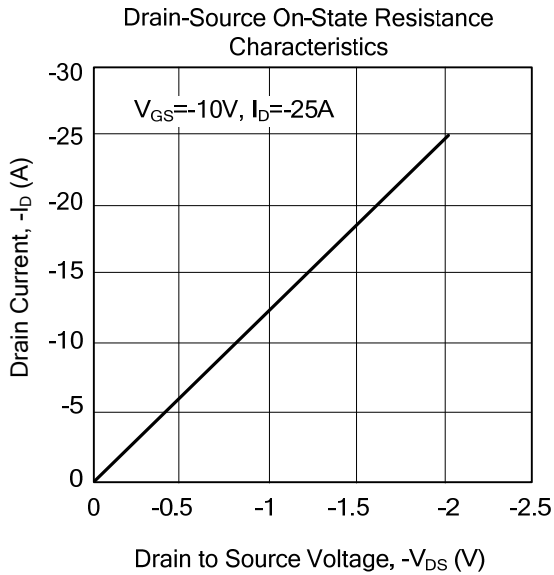
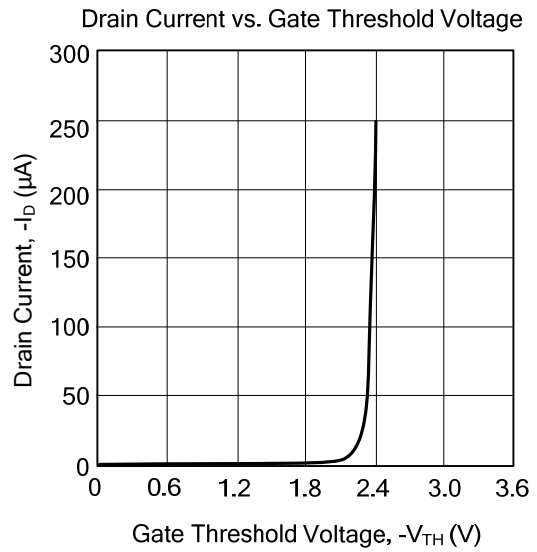
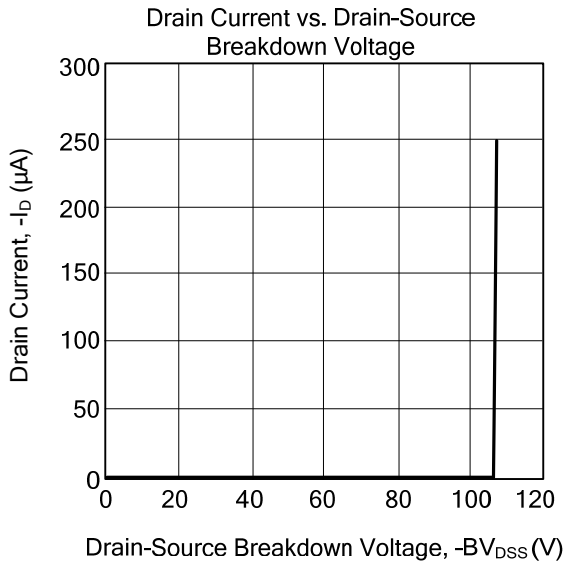
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D = -250μA, V _{GS} =0V	-100			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =Rated BV _{DSS} , V _{GS} =0V			-1	μA
		V _{DS} =0.8xRated BV _{DSS} , V _{GS} =0V, T _c =125°C			-25	
Gate- Source Leakage Current	Forward	I _{GSS}	V _{GS} =+20V, V _{DS} =0V			+100
	Reverse					-100
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D = -250μA	-1		-3	V
Static Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D = -25A			0.15	Ω
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =-25V, f=1MHz		430		pF
Output Capacitance	C _{OSS}			145		pF
Reverse Transfer Capacitance	C _{RSS}			110		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q _G	V _{GS} =-10V, V _{DD} =-50V, I _D =-1.3A, I _G = -100μA		285		nC
Gate to Source Charge	Q _{GS}			16		nC
Gate to Drain Charge	Q _{GD}			16		nC
Turn-ON Delay Time	t _{D(ON)}	I _D =-0.5A, V _{DS} =-30V, R _G =25Ω, V _{GS} =-10V		85		ns
Rise Time	t _R			60		ns
Turn-OFF Delay Time	t _{D(OFF)}			780		ns
Fall-Time	t _F			150		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage (Note 1)	V _{SD}	I _{SD} =-12.5A			-1.4	V

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

■ TEST CIRCUITS AND WAVEFORMS



TYPICAL CHARACTERISTICS



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. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.