

**UTT25P10****Power MOSFET****-25A, -100V P-CHANNEL
POWER MOSFET****DESCRIPTION**

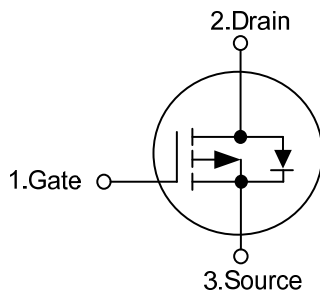
The UTC **UTT25P10** is a P-channel power MOSFET using UTC's advanced technology to provide the customers with high switching speed and a minimum on-state resistance, and it can also withstand high energy in the avalanche.

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

FEATURES

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

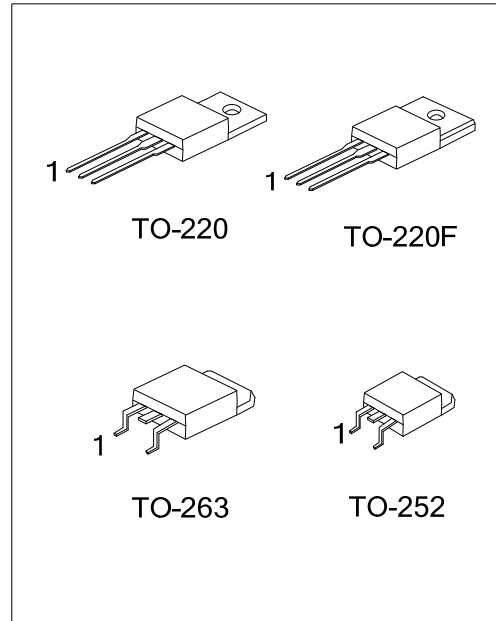
* High Switching Speed

SYMBOL**ORDERING INFORMATION**

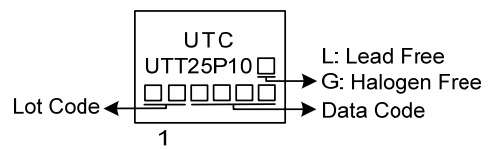
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT25P10L-TA3-T	UTT25P10G-TA3-T	TO-220	G	D	S	Tube
UTT25P10L-TF3-T	UTT25P10G-TF3-T	TO-220F	G	D	S	Tube
UTT25P10L-TN3-R	UTT25P10G-TN3-R	TO-252	G	D	S	Tape Reel
UTT25P10L-TQ2-T	UTT25P10G-TQ2-T	TO-263	G	D	S	Tube
UTT25P10L-TQ2-R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

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

UTT25P10G-TA3-T (1)Packing Type (2)Package Type (3)Green Package	(1) T: Tube, R: Tape Reel (2) TA3: TO-220, TF3: TO-220F, TN3: TO-252, TQ2: TO-263 (3) G: Halogen Free and Lead Free, Lead Free
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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

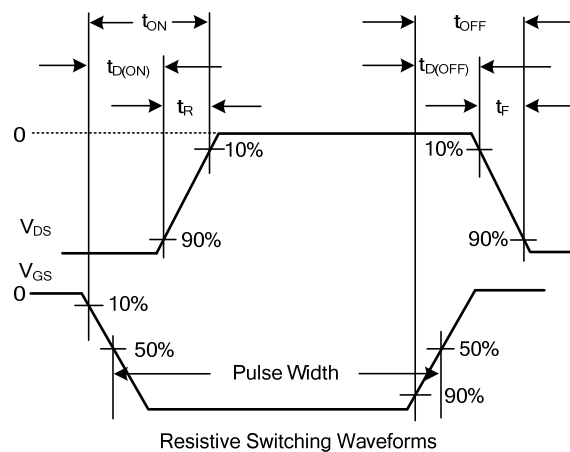
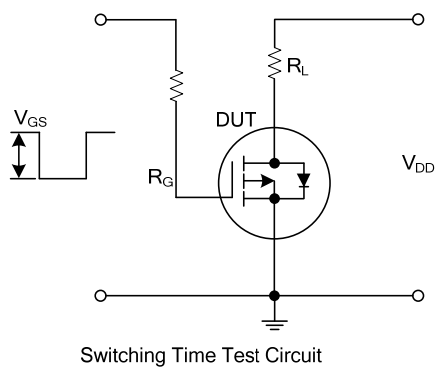
PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Case	TO-220/TO-263	θ _{JC}	0.83	°C/W
	TO-220F		4.5	
	TO-252		2.5	

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

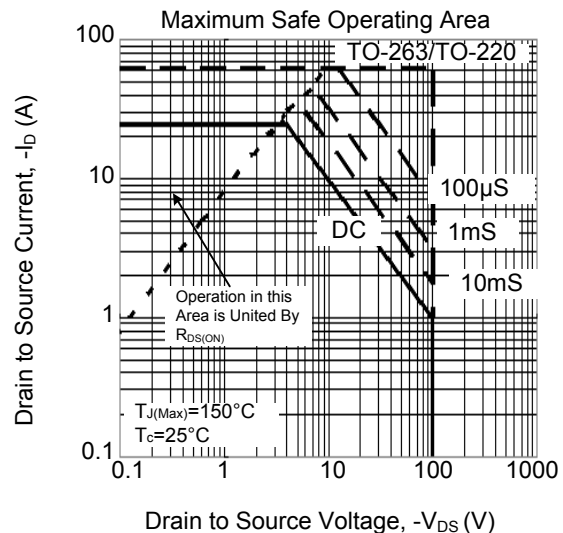
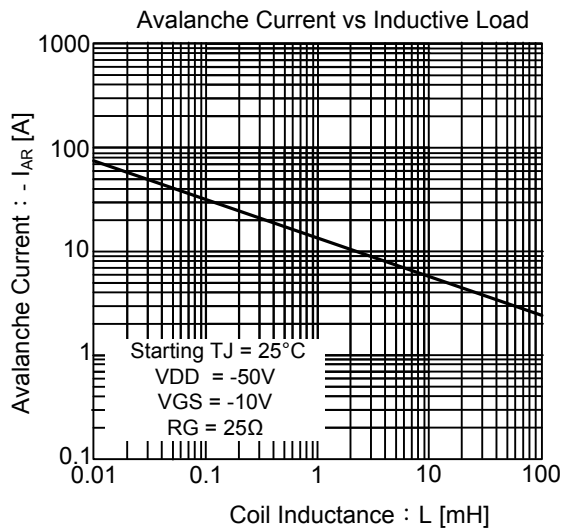
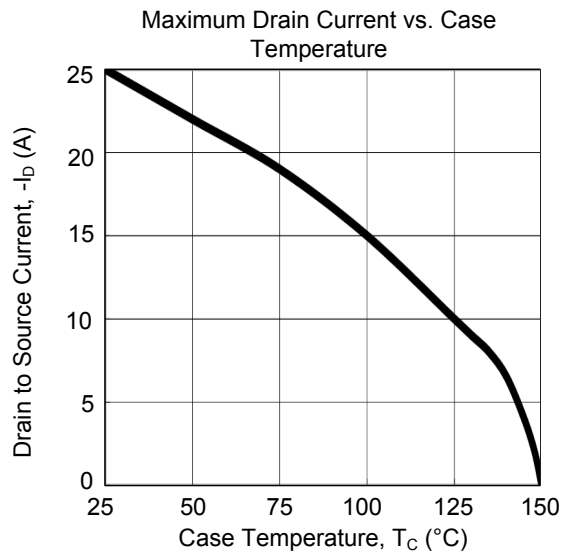
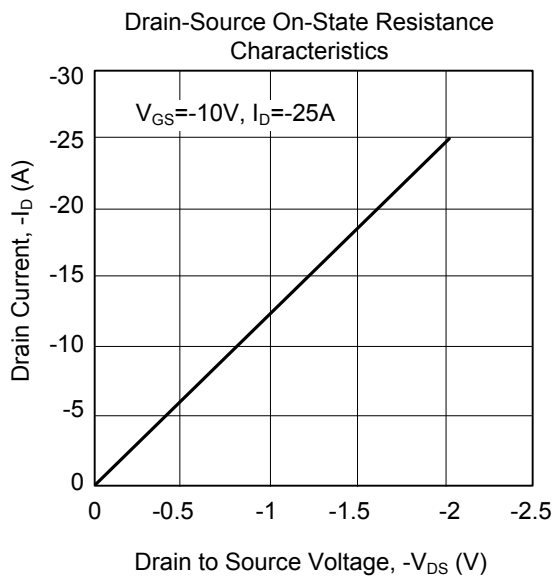
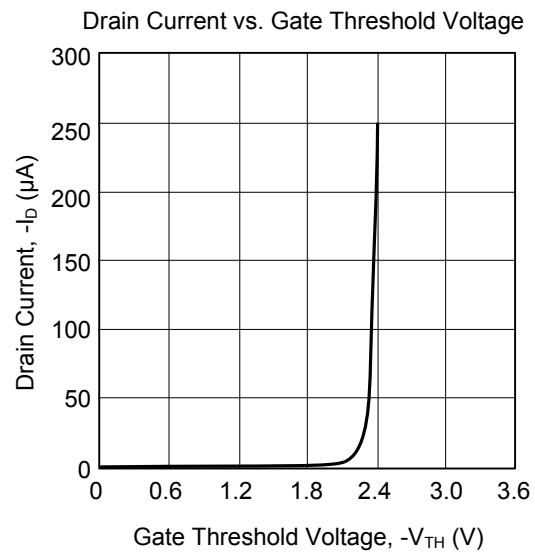
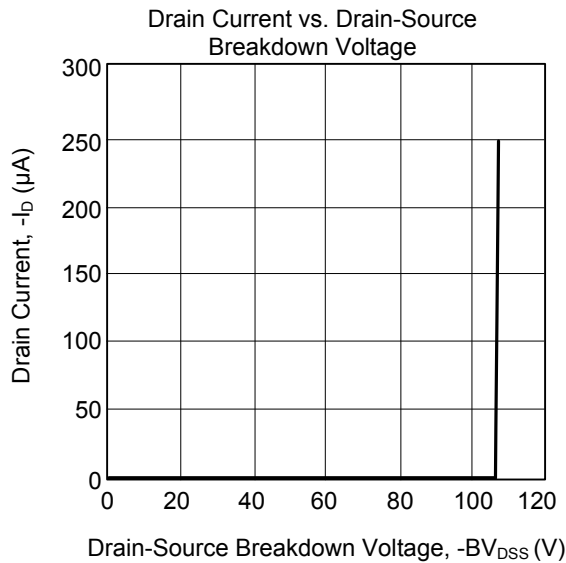
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV _{DSS}	I _D = -250μA, V _{GS} =0V	-100			V
Drain-Source Leakage Current		I _{DSS}	V _{DS} =Rated BV _{DSS} , V _{GS} =0V			-1	μA
			V _{DS} =0.8xRated BV _{DSS} , V _{GS} =0V , T _C =125°C			-25	
Gate- Source Leakage Current	Forward	I _{GSS}	V _{GS} =+20V, V _{DS} =0V			+100	nA
	Reverse		V _{GS} =-20V, V _{DS} =0V			-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		V _{GS(TH)}	V _{DS} =V _{GS} , I _D = -250μA	-1.0		-3.0	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		3700		pF
Output Capacitance		C _{OSS}			302		pF
Reverse Transfer Capacitance		C _{RSS}			126		pF
SWITCHING PARAMETERS							
Total Gate Charge		Q _G	V _{GS} =-10V, V _{DS} =-80V, I _D =-25A		70		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 =-25A, V _{DS} =-50V, R _{GS} =5.6Ω, V _{GS} =-10V		6.4		ns
Rise Time		t _R			8.3		ns
Turn-OFF Delay Time		t _{D(OFF)}			80		ns
Fall-Time		t _F			34.9		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%.

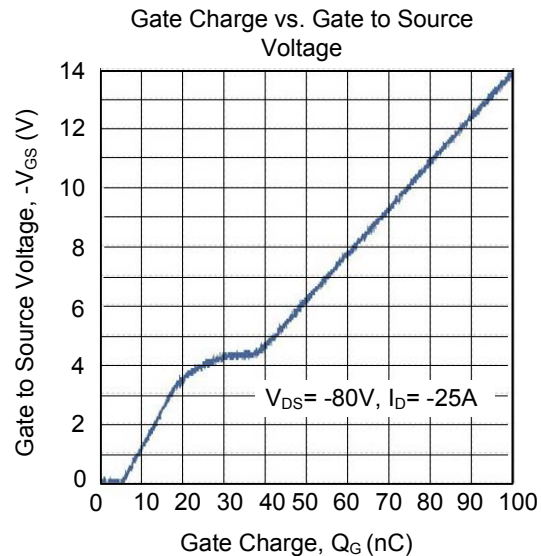
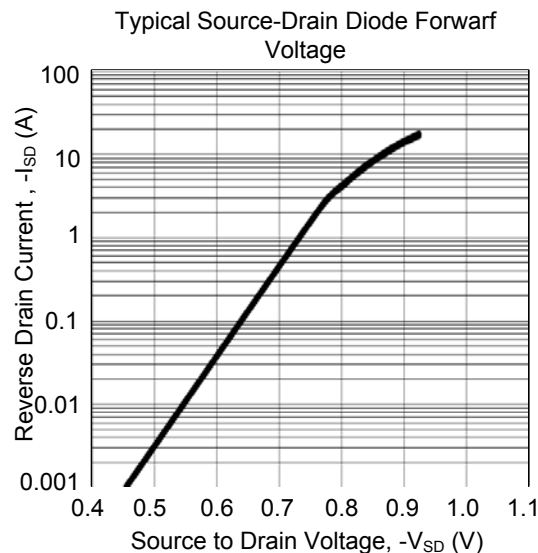
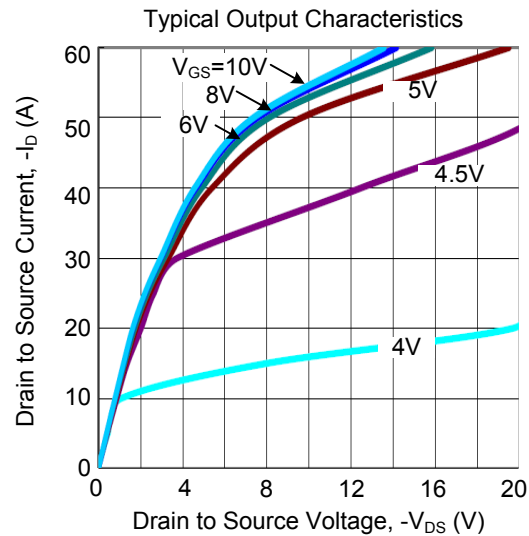
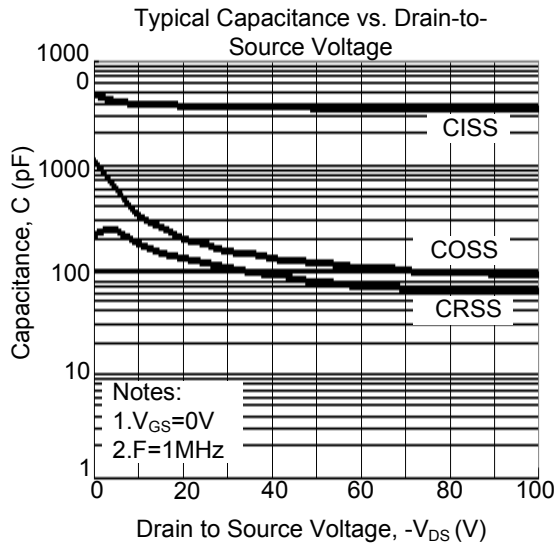
■ TEST CIRCUITS AND WAVEFORMS



TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS



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