



UTT36N10

Power MOSFET

36A, 100V N-CHANNEL POWER MOSFET

DESCRIPTION

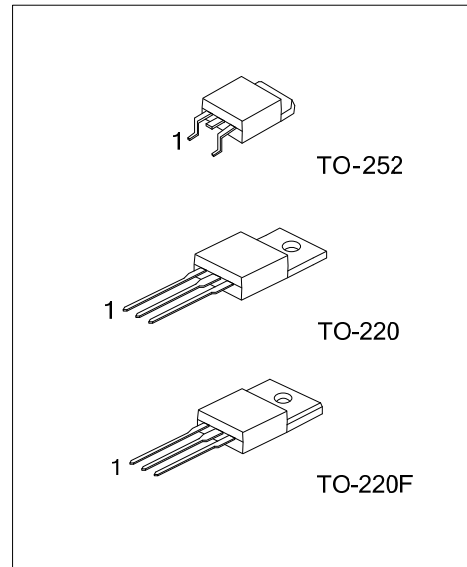
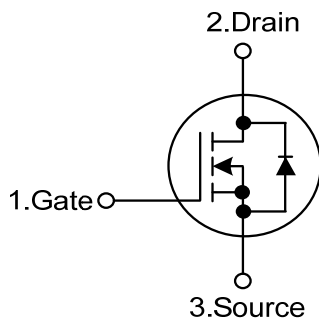
The UTC **UTT36N10** is a N-channel mode power MOSFET using UTC's advanced technology to provide customers with a minimum on-state resistance, low gate charge and high switching speed.

The UTC **UTT36N10** is suitable for high voltage synchronous rectifier and DC/DC converters, etc.

FEATURES

* High Switching Speed

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT36N10L-TA3-T	UTT36N10G-TA3-T	TO-220	G	D	S	Tube
UTT36N10L-TF3-T	UTT36N10G-TF3-T	TO-220F	G	D	S	Tube
UTT36N10L-TN3-T	UTT36N10G-TN3-T	TO-252	G	D	S	Tube
UTT36N10L-TN3-R	UTT36N10G-TN3-R	TO-252	G	D	S	Tape Reel

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

UTT36N10L-TA3-T 	(1) T: Tube, R: Tape Reel (2) TA3: TO-220, TF3: TO-220F, TN3: TO-252 (3) L: Lead Free, G: Halogen Free
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■ ABSOLUTE MAXIMUM RATINGS (T_c=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V _{DSS}	100	V
Gate-Source Voltage		V _{GSS}	±20	V
Drain Current	Continuous (V _{GS} =10V) T _c =25°C	I _D	36	A
	Pulsed	I _{DM}	144	A
Single Pulsed Avalanche Energy (Note 2)		E _{AS}	55	mJ
Power Dissipation	TO-220	P _D	125	W
	TO-220F		79	
	TO-252		44	
Junction Temperature		T _J	+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. Starting T_J = 25°C, L = 0.27mH, I_{AS} = 30A.

3. Pulse Width = 100s

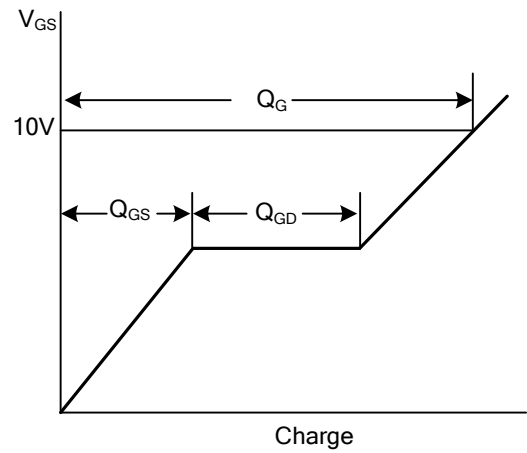
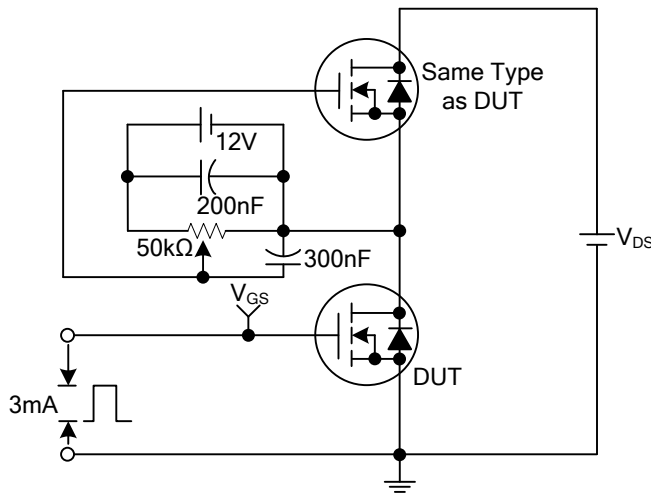
■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-220	θ _{JA}	62.5	°C/W
	TO-220F		62	
	TO-252		110	
Junction to Case	TO-220	θ _{JC}	1	°C/W
	TO-220F		1.58	
	TO-252		2.85	

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

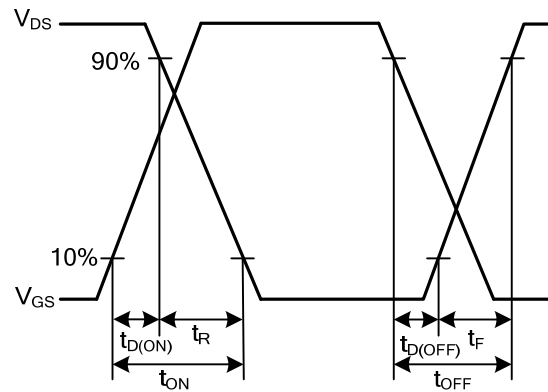
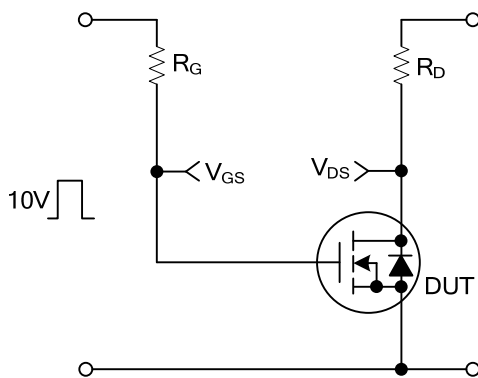
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =250μA, V _{GS} =0V	100			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V			1	μA
Gate- Source Leakage Current	I _{GSS}	Forward			+100	nA
		Reverse			-100	nA
ON 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 =30A		32	43	mΩ
		V _{GS} =6V, I _D =15A		40	72	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =25V, f=1.0MHz		2233		pF
Output Capacitance	C _{OSS}			171		pF
Reverse Transfer Capacitance	C _{RSS}			119		pF
SWITCHING PARAMETERS						
Turn-ON Time	t _{ON}	V _{DD} =30V, I _D =1A, V _{GS} =10V, R _{GS} =50Ω		72	83	ns
Turn-ON Delay Time	t _{D(ON)}			93	112	ns
Rise Time	t _R			868	890	ns
Turn-OFF Delay Time	t _{D(OFF)}			168	180	ns
Total Gate Charge at 10V	Q _G	V _{DD} =40V, I _D =36A, V _{GS} =10V		180	200	nC
Gate to Source Charge	Q _{GS}			21		nC
Gate to Drain Charge	Q _{GD}			20		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V _{SD}	I _{SD} =15A			1.0	V

TEST CIRCUITS AND WAVEFORMS



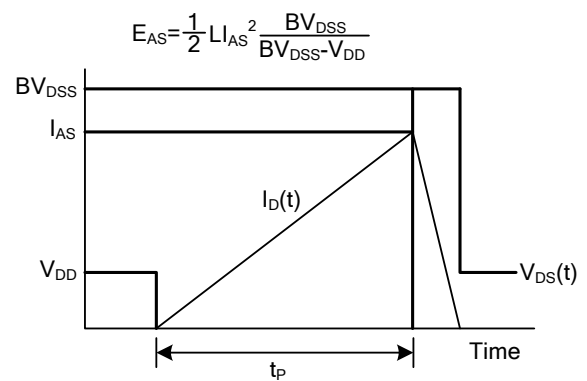
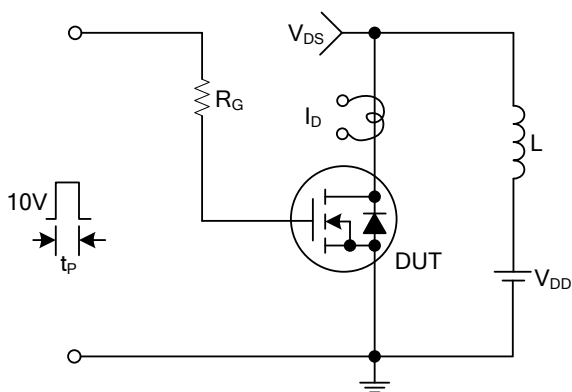
Gate Charge Test Circuit

Gate Charge Waveforms



Resistive Switching Test Circuit

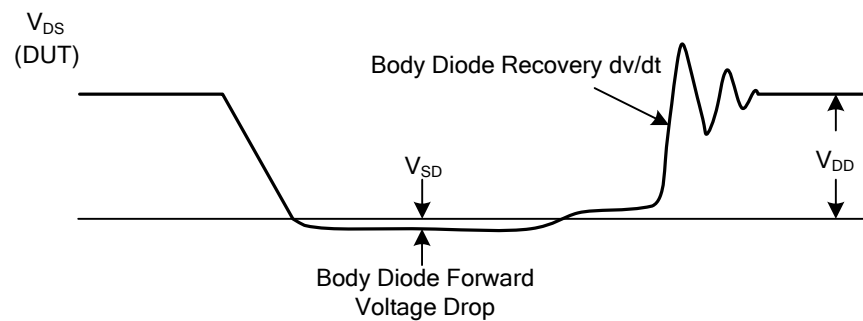
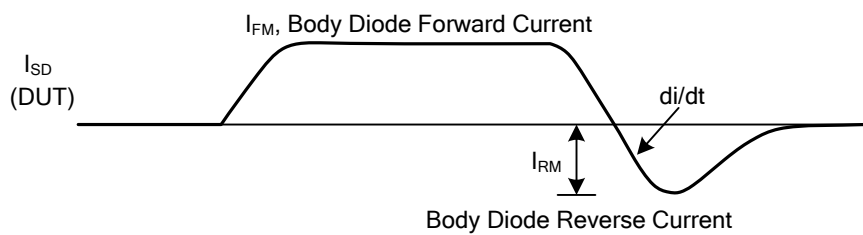
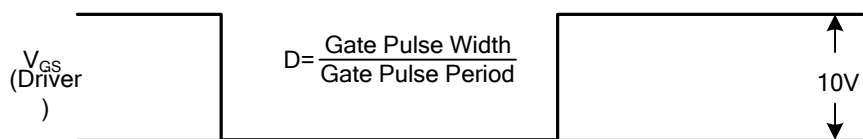
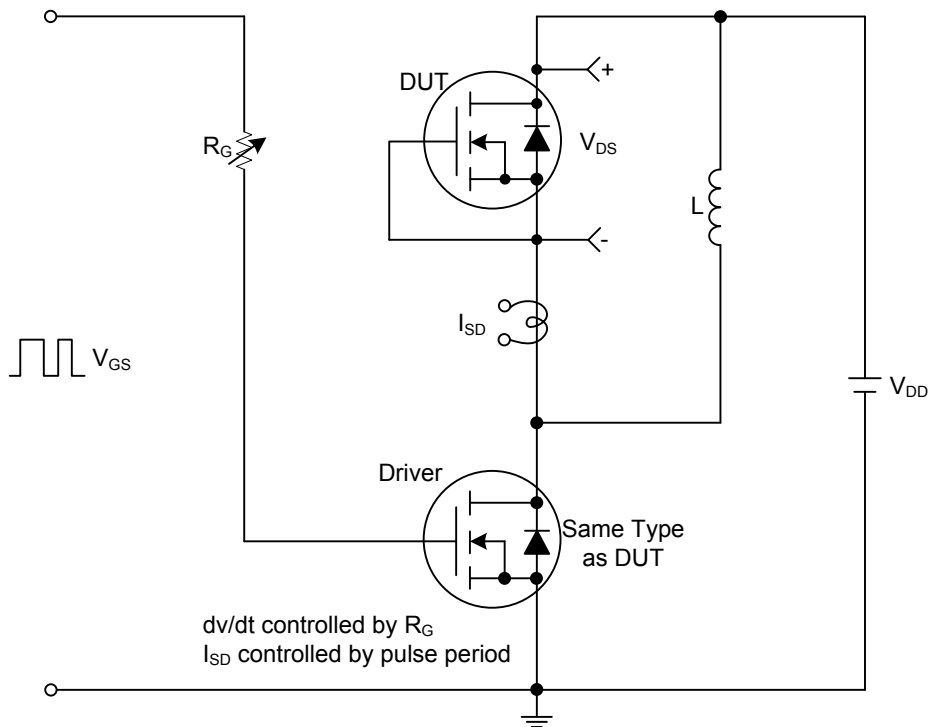
Resistive Switching Waveforms



Unclamped Inductive Switching Test Circuit

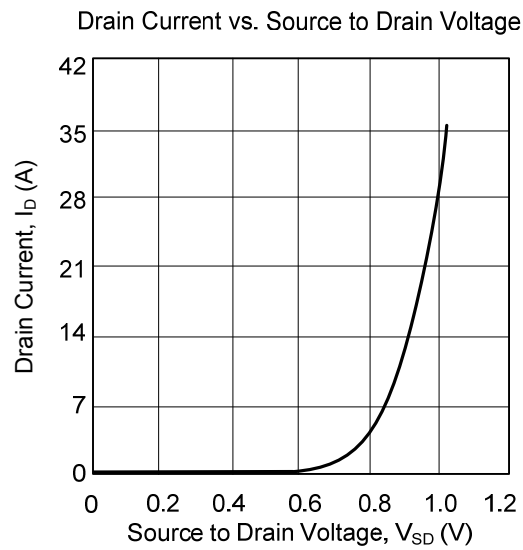
Unclamped Inductive Switching Waveforms

TEST CIRCUITS AND WAVEFORMS(Cont.)



Peak Diode Recovery dv/dt Test Circuit and Waveforms

■ TYPICAL CHARACTERISTICS



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