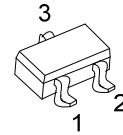
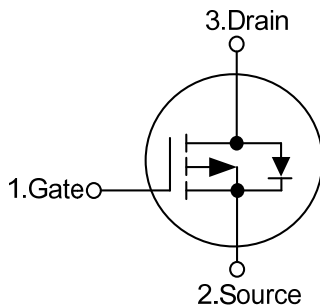


**UF02P10****Power MOSFET****-0.2A, -100V P-CHANNEL
POWER MOSFET****DESCRIPTION**

The UTC **UF02P10** is a P-channel power MOSFET using UTC's advanced technology to provide the customers with high switching speed, cost-effectiveness and a minimum on-state resistance. It can also withstand high energy in the avalanche.

FEATURES

- * $R_{DS(ON)} \leq 6.0 \Omega$ @ $V_{GS} = -10V$, $I_D = -0.1A$
- * Low capacitance
- * Low gate charge
- * Fast switching capability
- * Avalanche energy specified

SYMBOL

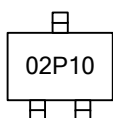
SOT-23-3
(JEDEC TO-236)

ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UF02P10L-AE2-R	UF02P10G-AE2-R	SOT-23-3	G	S	D	Tape Reel

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

UF02P10G-AE2-R (1) Packing Type (2) Package Type (3) Green Package		(1) R: Tape Reel (2) AE2: SOT-23-3 (3) G: Halogen Free and Lead Free, L: Lead Free
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MARKING

■ 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
Continuous Drain Current	I _D	-0.2	A
Pulsed Drain Current (Note 2)	I _{DM}	-0.8	A
Power Dissipation	P _D	0.3	W
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. Repetitive Rating: Pulse width limited by maximum junction temperature.

■ THERMAL DATA

PARAMETER	SYMBOL	RATING	UNIT
Junction to Ambient	θ _{JA}	325	°C/W
Junction to Case	θ _{JC}	110	°C/W

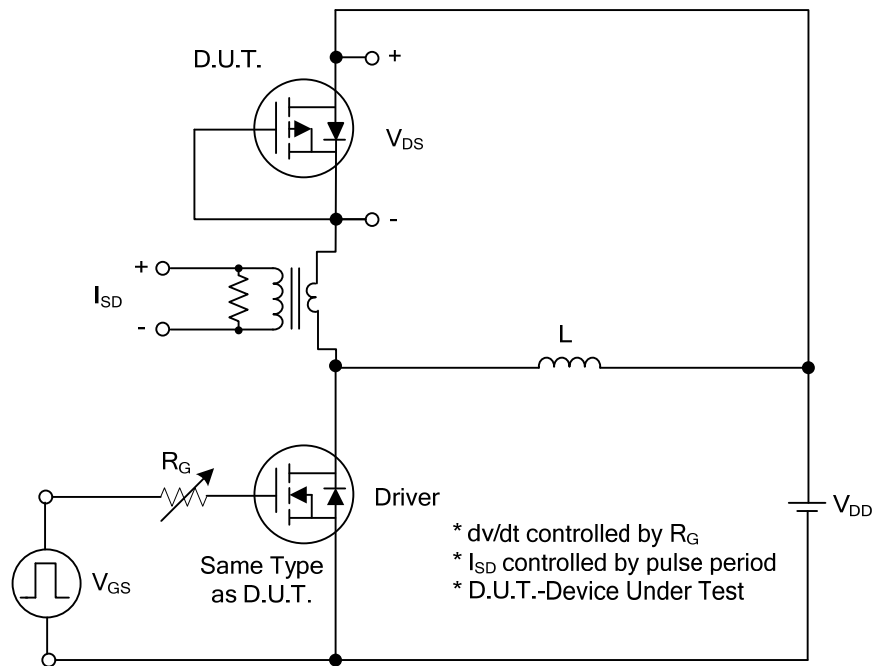
■ ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0 V, I _D =-250μA	-100			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =-100V, V _{GS} =0V			-1	μA
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =-250μA	-2.0		-4.0	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-0.1A			6.0	Ω
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =-25V, V _{GS} =0V, f=1.0MHz		85		pF
Output Capacitance	C _{OSS}			43		pF
Reverse Transfer Capacitance	C _{RSS}			17		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q _G	V _{DS} =-50V, V _{GS} =-10V, I _D =-0.5A I _G =-100μA (Note 1, 2)		6.8		nC
Gate Source Charge	Q _{GS}			2		nC
Gate Drain Charge	Q _{GD}			1		nC
Turn-ON Delay Time	t _{D(ON)}	V _{DD} =-30V, V _{GS} =-10V, I _D =-0.5A, R _G =25Ω (Note 1, 2)		4		ns
Turn-ON Rise Time	t _R			13.5		ns
Turn-OFF Delay Time	t _{D(OFF)}			16		ns
Turn-OFF Fall-Time	t _F			44		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Continuous Drain-Source Diode Forward Current	I _S				-0.2	A
Maximum Pulsed Drain-Source Diode Forward Current	I _{SM}				-0.8	A
Diode Forward Voltage	V _{SD}	I _S =-0.8A, V _{GS} =0V			-2.0	V

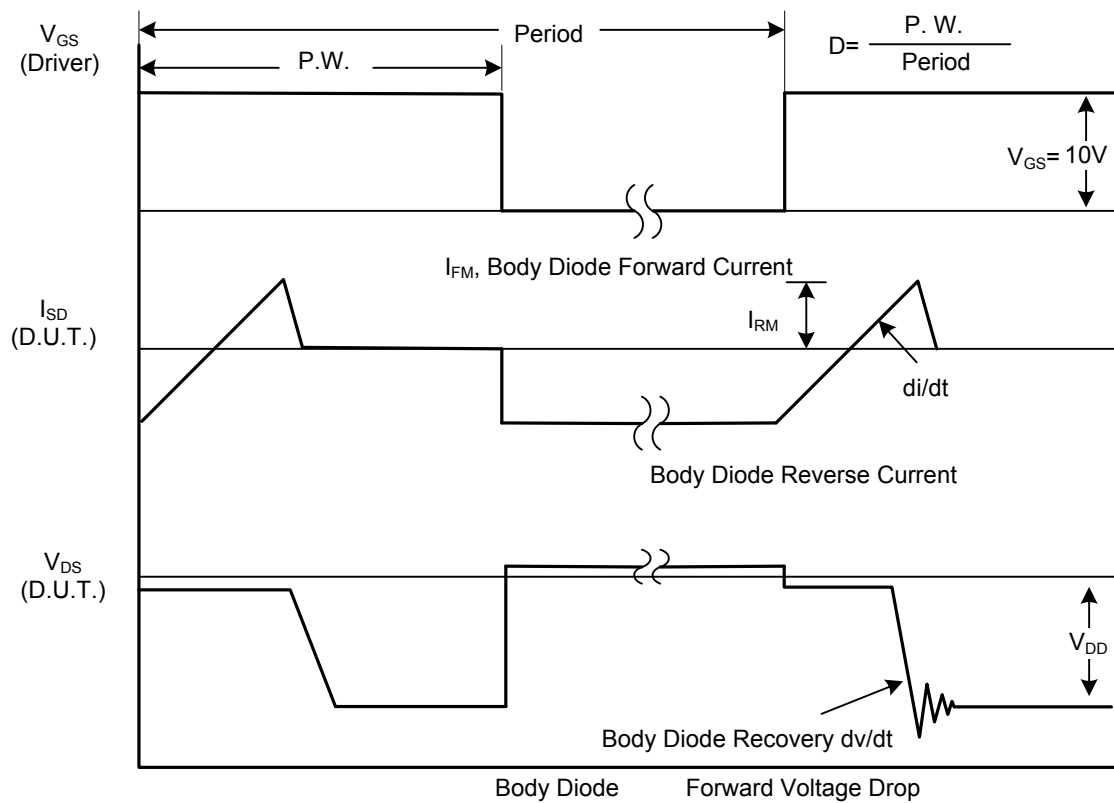
Notes: 1. Pulse Test : Pulse width ≤ 300μs, Duty cycle ≤ 2%.

2. Essentially independent of operating temperature.

■ TEST CIRCUITS AND WAVEFORMS

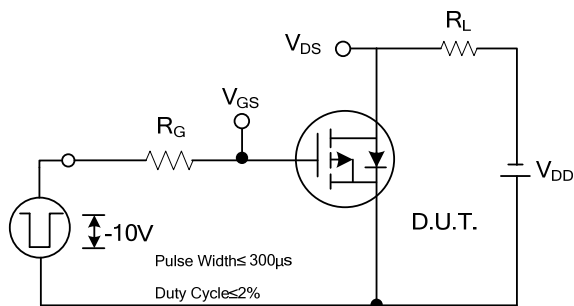


Peak Diode Recovery dv/dt Test Circuit

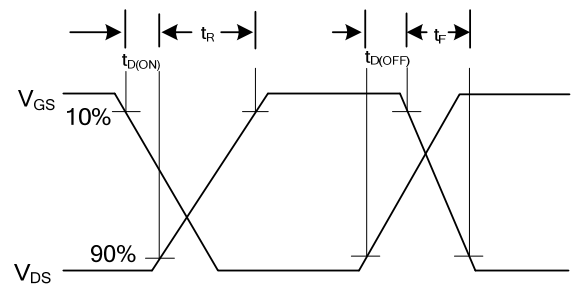


Peak Diode Recovery dv/dt Waveforms

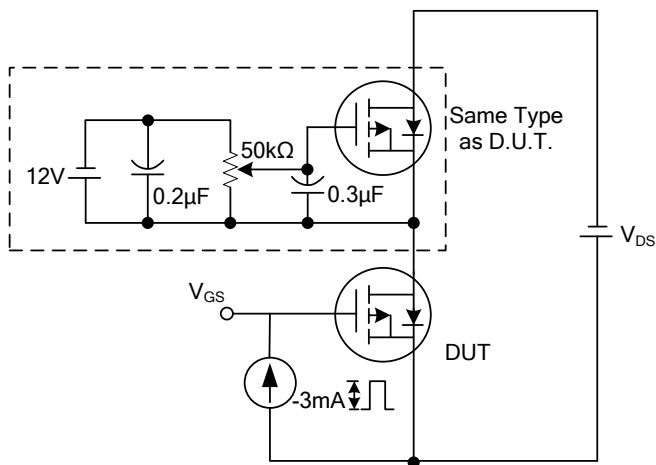
■ TEST CIRCUITS AND WAVEFORMS



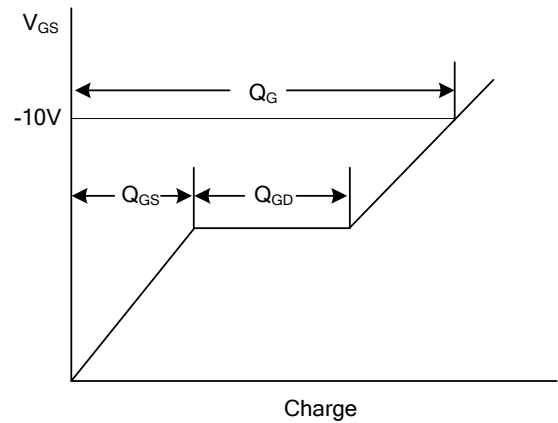
Switching Test Circuit



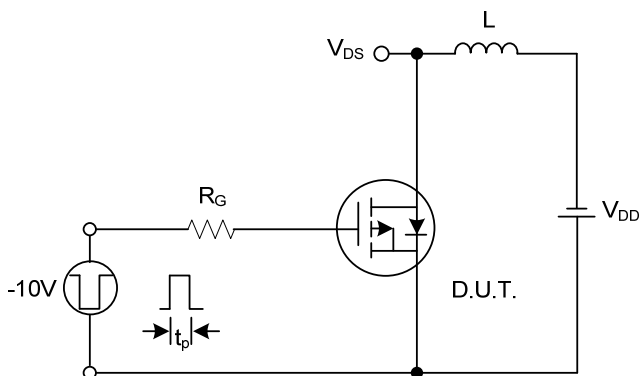
Switching Waveforms



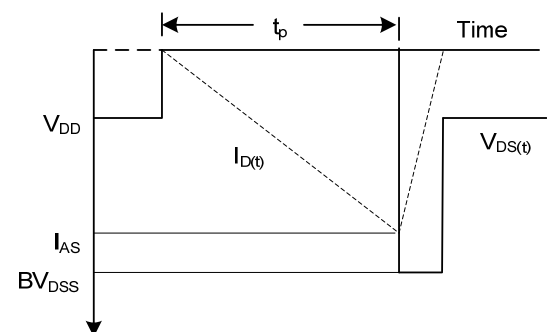
Gate Charge Test Circuit



Gate Charge Waveform



Unclamped Inductive Switching Test Circuit



Unclamped Inductive Switching Waveforms

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