

**UF7464****Power MOSFET**

3A, 200V N-CHANNEL ENHANCEMENT MODE TRENCH POWER MOSFET

DESCRIPTION

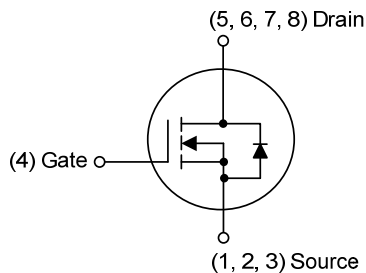
The UTC **UF7464** is a N-channel Power MOSFET, it uses UTC's advanced technology to provide the customers with low $R_{DS(ON)}$ characteristic by high cell density trench technology.

The UTC **UF7464** is suitable for high efficiency synchronous rectification in SMPS, UPS, hard switched and high frequency circuits.

FEATURES

- * $R_{DS(ON)} \leq 0.2 \Omega$ @ $V_{GS}=10V$, $I_D=1.5A$
- * High switching speed
- * 100% avalanche tested

SYMBOL



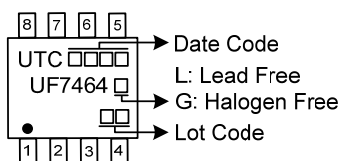
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UF7464L-S08-R	UF7464G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel

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

UF7464G-S08-R 		(1) R: Tape Reel (2) S08: SOP-8 (3) G: Halogen Free and Lead Free, L: Lead Free
--------------------------	--	---

MARKING



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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DS}	200	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	Continuous	I_D	3	A
Pulsed Drain Current	Pulsed (Note 2)	I_{DM}	12	A
Peak Diode Recovery dv/dt (Note 3)		dv/dt	4.3	V/nS
Power Dissipation		P_D	8.0	W
Junction Temperature		T_J	+150	$^{\circ}\text{C}$
Storage Temperature Range		T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

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. $I_{SD} \leq 1.0\text{A}$, $di/dt \leq 200\text{A}/\mu\text{s}$, $V_{DD} \leq V_{(BR)DSS}$, $T_J = 25^{\circ}\text{C}$.

■ THERMAL DATA

PARAMETER	SYMBOL	RATING	UNIT
Junction to Ambient	θ_{JA}	90	$^{\circ}\text{C}/\text{W}$
Junction to Case	θ_{JC}	15.6	$^{\circ}\text{C}/\text{W}$

Note: The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.

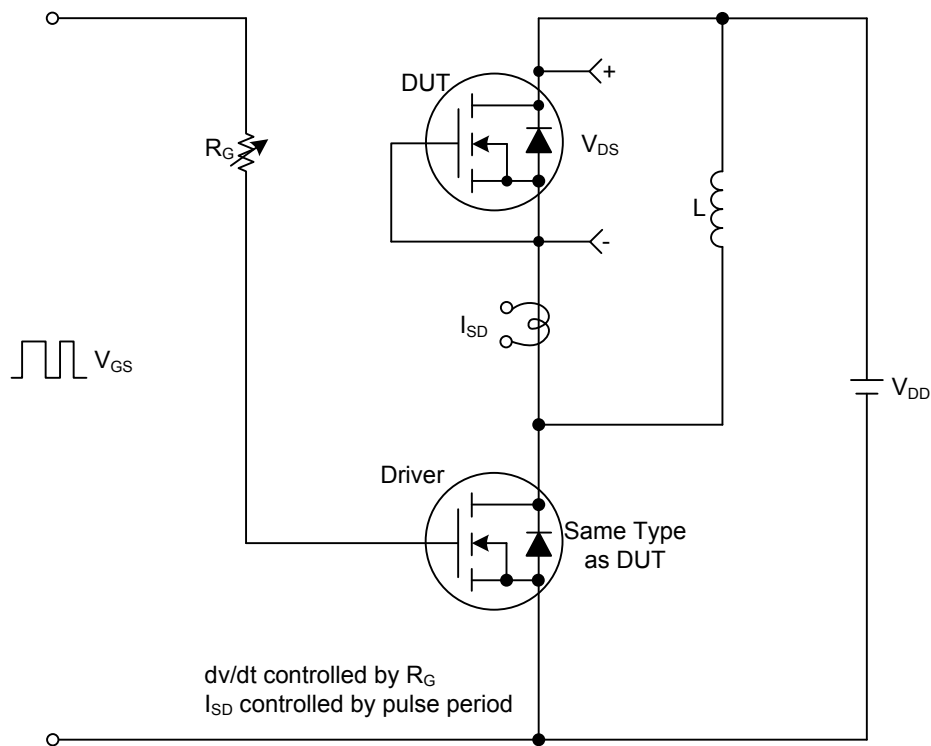
■ ELECTRICAL CHARACTERISTICS

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV _{DSS}	I _D =250μA, V _{GS} =0V	200			V
Drain-Source Leakage Current		I _{DSS}	V _{DS} =160V, V _{GS} =0V			10	μA
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	2.0		4.0	V
Static Drain-Source On-State Resistance		R _{DS(ON)}	V _{GS} =10V, I _D =1.5A			0.2	Ω
DYNAMIC PARAMETERS							
Input Capacitance		C _{ISS}	V _{GS} =0V, V _{DS} =25V, f=1MHz		1520		pF
Output Capacitance		C _{OSS}			155		pF
Reverse Transfer Capacitance		C _{RSS}			13		pF
SWITCHING PARAMETERS							
Total Gate Charge (Note 1)		Q _G	V _{DS} =160V, V _{GS} =10V, I _D =3A I _G =1mA (Note 1, 2)		34		nC
Gate to Source Charge		Q _{GS}			8		nC
Gate to Drain Charge		Q _{GD}			5		nC
Turn-on Delay Time (Note 1)		t _{D(ON)}	V _{DD} =100V, V _{GS} =10V, I _D =3A R _G =25Ω (Note 1, 2)		12		ns
Rise Time		t _R			18		ns
Turn-off Delay Time		t _{D(OFF)}			105		ns
Fall-Time		t _F			28		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I _S				3	A
Maximum Body-Diode Pulsed Current		I _{SM}				12	A
Drain-Source Diode Forward Voltage (Note 1)		V _{SD}	I _S =3.0A			1.3	V
Reverse Recovery Time (Note 1)		t _{rr}	I _S =3.0A, V _{GS} =0V,		80		nS
Reverse Recovery Charge		Q _{rr}	dI _F /dt=100A/μs		420		nC

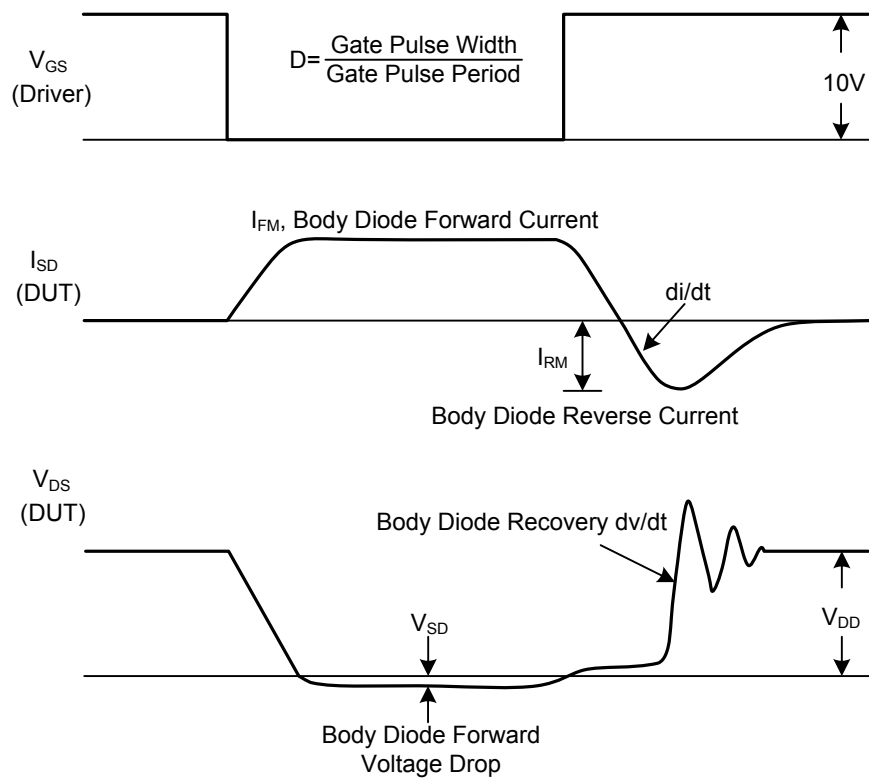
Notes: 1. Pulse Test: Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$.

2. Essentially independent of operating temperature.

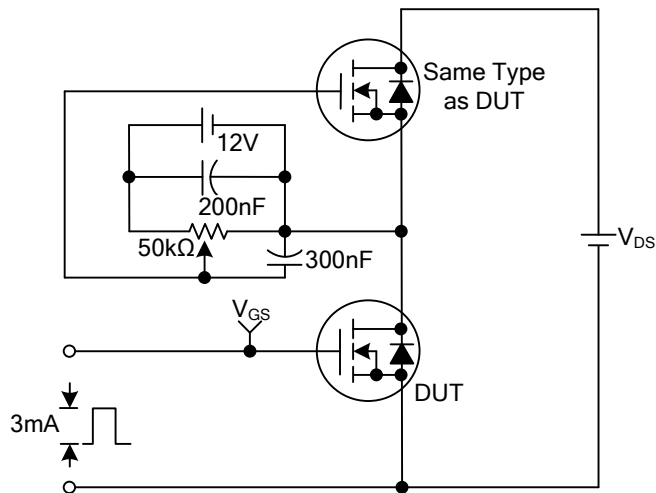
■ TEST CIRCUITS AND WAVEFORMS



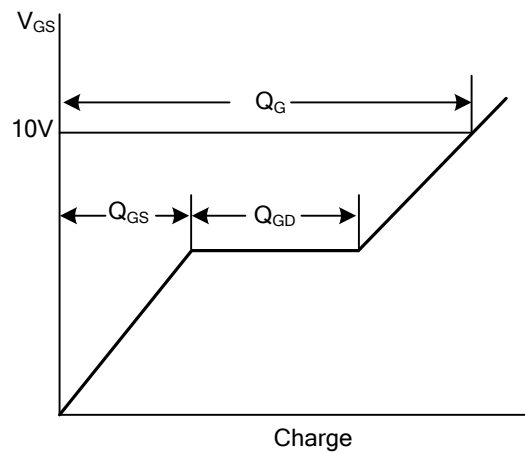
Peak Diode Recovery dv/dt Test Circuit & Waveforms



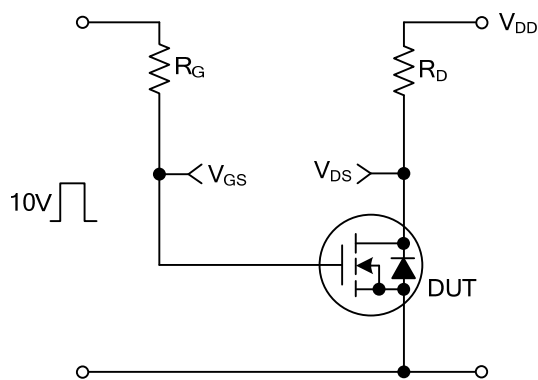
■ TEST CIRCUITS AND WAVEFORMS (Cont.)



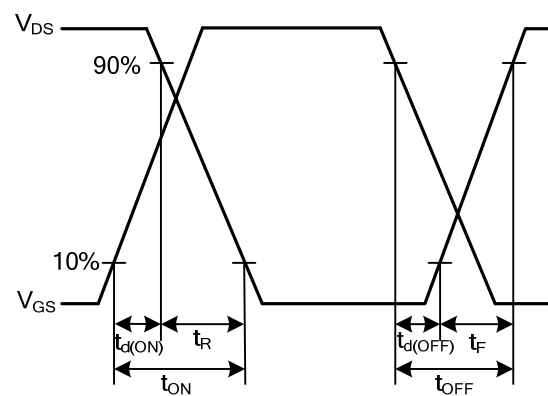
Gate Charge Test Circuit



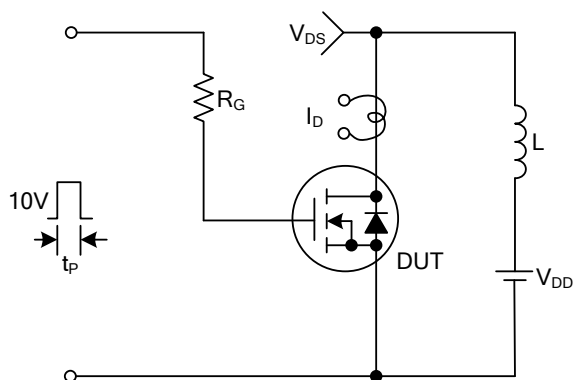
Gate Charge Waveforms



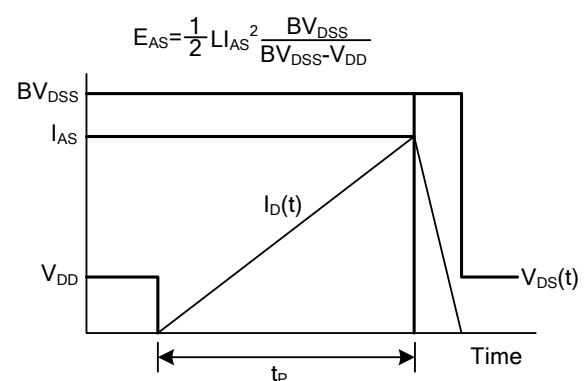
Resistive Switching Test Circuit



Resistive Switching Waveforms



Unclamped Inductive Switching Test Circuit



Unclamped Inductive Switching Waveforms

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. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.