



UT4392

Power MOSFET

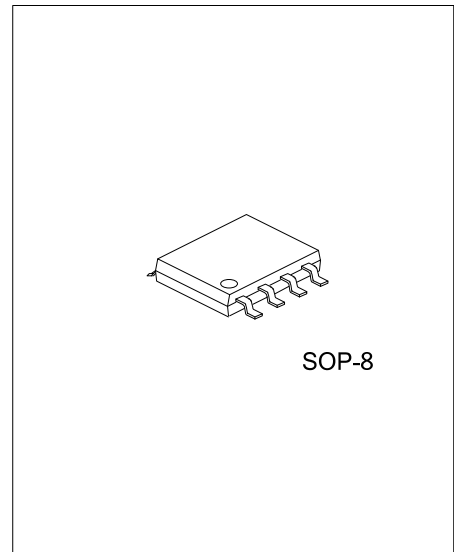
30V N-CHANNEL POWER MOSFET

DESCRIPTION

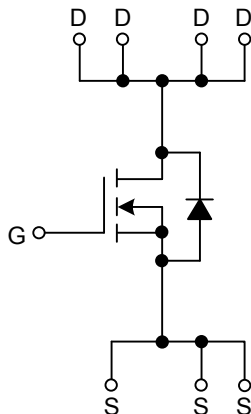
The **UT4392** uses UTC advanced technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with low gate voltages. This device is suitable for being used in such applications: high-Side DC/DC Conversion, notebook and sever.

FEATURES

- * $V_{DS}(V)=30V$
- * $I_D=12.5 A (V_{GS}=10V)$
- * High Density Cell Design for Ultra Low On-resistance
- * $R_{DS(ON)}<11.5m\Omega@V_{GS}=10V$
- * $R_{DS(ON)}<16.5m\Omega@V_{GS}=4.5V$



SYMBOL



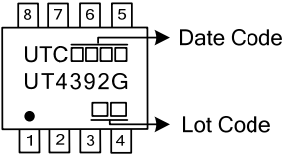
ORDERING INFORMATION

Ordering Number	Package	Pin Assignment								Packing
		1	2	3	4	5	6	7	8	
UT4392G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel

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

UT4392G-S08-R <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Green Package 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) S08: SOP-8 (3) G: Halogen Free and Lead Free
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■ MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	I_D	12.5	A
Pulsed Drain Current	I_{DM}	50	A
Power Dissipation($T_A = 25^\circ\text{C}$)	P_D	3.0	W
Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

Note: 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.

■ THERMAL DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient (PCB mounted)	θ_{JA}			50	$^\circ\text{C/W}$
Junction to Case	θ_{JC}			25	$^\circ\text{C/W}$

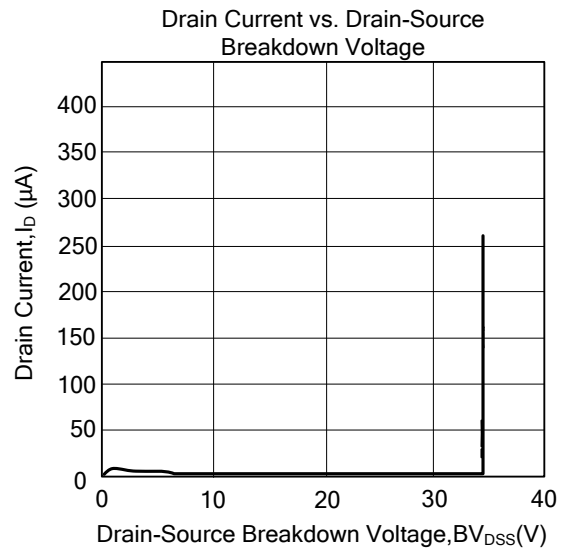
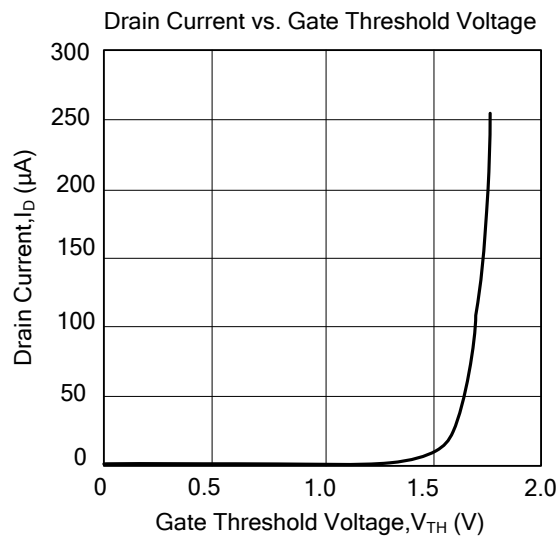
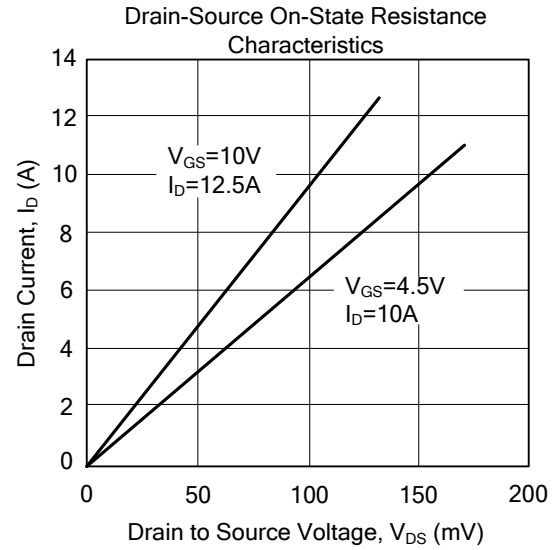
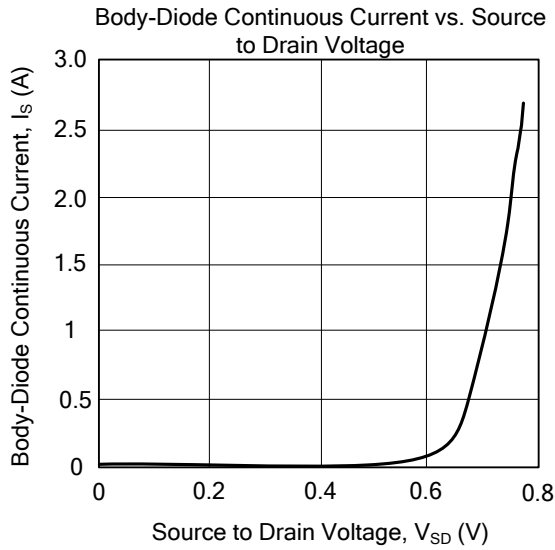
Notes: 1. Pulse width limited by the Maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.

■ ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0\text{ V}, I_D = 250\ \mu\text{A}$	30			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = 24\text{ V}, V_{GS} = 0\text{ V}$			1.0	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 20\text{ V}, V_{DS} = 0\text{ V}$			± 100	nA
ON CHARACTERISTICS						
Gate-Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_{DS} = 250\ \mu\text{A}$	1	1.8	3	V
On State Drain Current (Note 1)	$I_{D(ON)}$	$V_{DS} \geq 5\text{ V}, V_{GS} = 10\text{ V}$	30			A
Static Drain-Source On-Resistance(Note 1)	$R_{DS(ON)}$	$V_{GS} = 10\text{ V}, I_D = 12.5\text{ A}$		9	11.5	m Ω
		$V_{GS} = 4.5\text{ V}, I_D = 10\text{ A}$		13	16.5	m Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{DS} = 15\text{ V}, V_{GS} = 0\text{ V},$ $f = 1.0\text{ MHz},$ (Note 2)		2134		pF
Output Capacitance	C_{OSS}			343		pF
Reverse Transfer Capacitance	C_{RSS}			134		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q_G	$V_{DS} = 15\text{ V}, V_{GS} = 10\text{ V},$ $I_D = 12.5\text{ A},$ (Note 2)		26		nC
Gate Source Charge	Q_{GS}			6		nC
Gate Drain Charge	Q_{GD}			5		nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD} = 15\text{ V}, I_D = 1\text{ A}, V_{GEN} = 10\text{ V}$ $R_G = 6\ \Omega, R_L = 15\ \Omega,$ (Note 3)		17		ns
Turn-ON Rise Time	t_R			3.5		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			40		ns
Turn-OFF Fall-Time	t_F			6		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Diode Forward Voltage	V_{SD}	$I_S = 2.7\text{ A}, V_{GS} = 0\text{ V}$		0.85	1.3	V
Maximum Body-Diode Continuous Current	I_S	(Note 4,5)			2.7	A

Notes: 1. Pulse Test: $PW \leq 300\ \mu\text{s}$, Duty Cycle $\leq 2\%$
2. For DESIGN AID ONLY, not subject to production testing.
3. Switching time is essentially independent of operating temperature.
4. Pulse width limited by the Maximum junction temperature.
5. Surface Mounted on FR4 Board, $t \leq 10$ sec.

■ TYPICAL CHARACTERISTICS



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