

**UT9564**

Preliminary

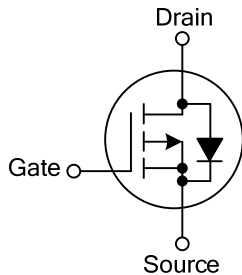
Power MOSFET**P-CHANNEL ENHANCEMENT
MODE POWER MOSFET****DESCRIPTION**

The UTC **UT9564** is a P-ch enhancement mode power MOSFET and it uses UTC perfect technology to provide customers with fast switching, ruggedized device design, low on-resistance and cost-effectiveness.

The UTC **UT9564** is ideal for applications such as low voltage applications, DC/DC converters and all commercial-industrial surface mount applications.

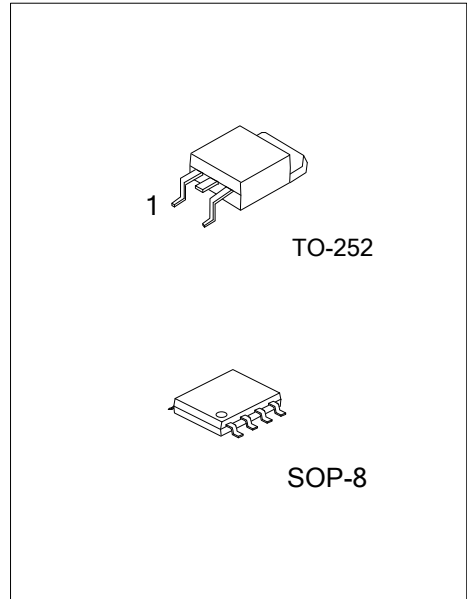
FEATURES

- * Simple Drive Requirement
- * Fast Switching Speed
- * Low On-Resistance

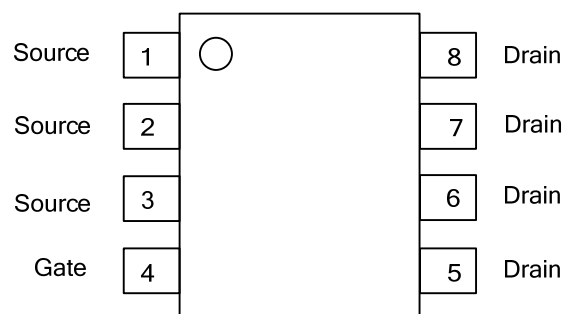
SYMBOL**ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UT9564L-TN3-R	UT9564G-TN3-R	TO-252	G	D	S	-	-	-	-	-	Tape Reel
UT9564L-S08-R	UT9564G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel
UT9564L-S08-T	UT9564G-S08-T	SOP-8	S	S	S	G	D	D	D	D	Tube

UT9564L-S08-R	(1)Packing Type	(1) R: Tape Reel, T: Tube
	(2)Package Type	(2) S08: SOP-8, TN3: TO-252
	(3)Halogen Free	(3) G: Halogen Free, L: Lead Free



■ PIN CONFIGURATION



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DS}	-40	V
Gate-Source Voltage		V_{GS}	±25	V
Continuous Drain Current (Note 2)	T _A =25°C	I _D	-7.3	A
	T _A =70°C		-5.9	A
Pulsed Drain Current (Note 1)		I _{DM}	-30	A
Power Dissipation (T _A =25°C)	TO-252	P _D	2	W
	SOP-8		2.5	
Linear Derating Factor			0.02	W/°C
Junction Temperature		T _J	-55 ~150	°C
Storage Temperature		T _{STG}	-55 ~150	°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	RATINGS	UNIT
Junction to Ambient (Note 2)	TO-252	θ_{JA}	62.5	°C/W
	SOP-8		50	

Note: 1. Pulse width limited by Max. junction temperature.

2. Surface mounted on 1 in² copper pad of FR4 board, $t \leq 10\text{sec}$; 125 $^\circ\text{C}$ /W when mounted on Min. copper pad.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=-250\mu A$, $V_{GS}=0V$	-40			V
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	Reference to 25°C, $I_D=-1mA$		-0.03		V/°C
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=-40V$, $V_{GS}=0V$, $T_J=25^\circ C$			-1	μA
		$V_{DS}=-32V$, $V_{GS}=0V$, $T_J=70^\circ C$			-25	
Gate- Source Leakage Current	I_{GSS}	$V_{GS}=\pm 25V$			± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}$, $I_D=-250\mu A$	-1		-3	V
Static Drain-Source On-State Resistance (Note)	$R_{DS(ON)}$	$V_{GS}=-10V$, $I_D=-7A$			28	mΩ
		$V_{GS}=-4.5V$, $I_D=-5A$			40	
Forward Transconductance	g_{FS}	$V_{DS}=-10V$, $I_D=-7A$		13		S
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0V$, $V_{DS}=-25V$, $f=1.0MHz$		2240	3600	pF
Output Capacitance	C_{OSS}			300		pF
Reverse Transfer Capacitance	C_{RSS}			250		pF
SWITCHING PARAMETERS						
Total Gate Charge (Note)	Q_G	$V_{GS}=-4.5V$, $V_{DS}=-32V$, $I_D=-7A$		27	43	nC
Gate to Source Charge	Q_{GS}			6		nC
Gate to Drain Charge	Q_{GD}			14		nC
Turn-ON Delay Time (Note)	$t_{D(ON)}$	$V_{GS}=-10V$, $V_{DS}=-20V$, $I_D=-1A$, $R_G=3.3\Omega$, $R_D=20\Omega$		14		ns
Rise Time	t_R			8		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			46		ns
Fall-Time	t_F			17		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage (Note)	V_{SD}	$I_S=-2A$, $V_{GS}=0V$			-1.2	V
Reverse Recovery Time (Note)	t_{RR}	$I_S=-7A$, $V_{GS}=0V$,		37		ns
Reverse Recovery Charge	Q_{RR}	$dI/dt=100A/\mu s$		57		nC

Note: Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

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