



UT9564

Power MOSFET

-40V, -7.3A P-CHANNEL ENHANCEMENT MODE POWER MOSFET

■ DESCRIPTION

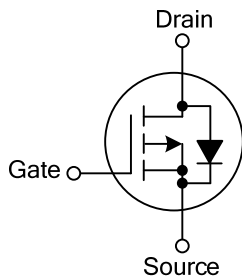
The UTC **UT9564** is a P-ch enhancement mode power MOSFET and it uses UTC perfect technology to provide customers with fast switching, ruggedized device design, low on-resistance and cost-effectiveness.

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

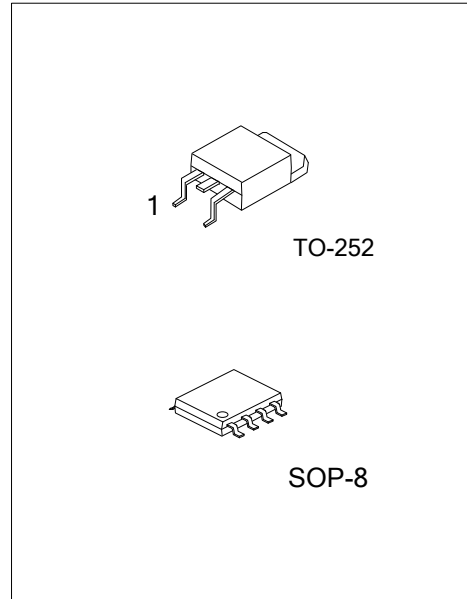
■ SYMBOL



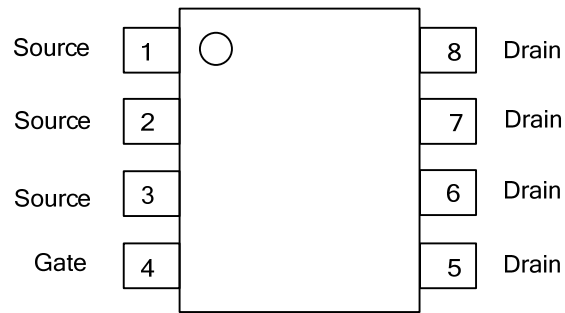
■ ORDERING INFORMATION

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)	I_D	-7.3	A
		-5.9	A
Pulsed Drain Current (Note 1)	I_{DM}	-30	A
Power Dissipation ($T_A=25^\circ\text{C}$)	P_D	2	W
		2.5	
Linear Derating Factor		0.02	W/ $^\circ\text{C}$
Junction Temperature	T_J	-55 ~ 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	RATINGS	UNIT
Junction to Ambient (Note 2)	θ_{JA}	62.5	$^\circ\text{C/W}$
		50	

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

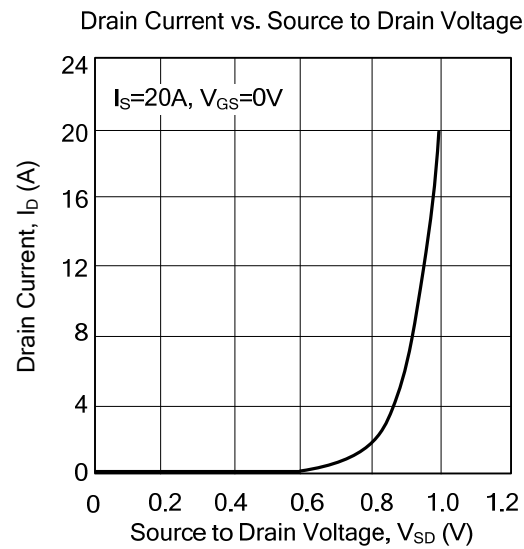
2. Surface mounted on 1 in² copper pad of FR4 board, $t \leq 10\text{sec}$; 125 $^\circ\text{C}$ /W when mounted on Min. copper pad.

■ 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 =-250μA, V _{GS} =0V	-40			V
Breakdown Voltage Temperature Coefficient	ΔBV _{DSS} /ΔT _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°C			-1	μA
		V _{DS} =-32V, V _{GS} =0V, T _J =70°C			-25	
Gate- Source Leakage Current	I _{GSS}	V _{GS} =±25V			±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 (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 =3.3Ω, R _D =20Ω		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}	dl/dt=100A/μs		57		nC

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

■ TYPICAL CHARACTERISTICS



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