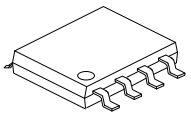
4A, 20V DUAL P-CHANNEL POWER MOSFET



SOP-8

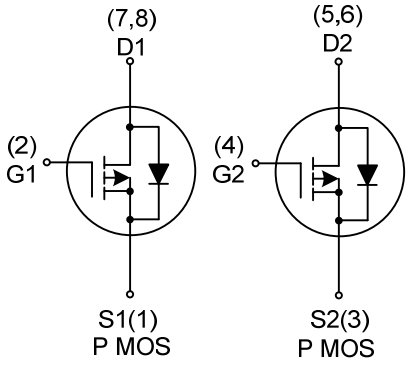
■ DESCRIPTION

The UTC **UD4P20** uses advanced technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with low gate voltages. This device is manufacturing reproducible. The UTC **UD4P20** is suitable for applications, such as battery management in nomadic equipment and power management in cellular phone.

■ FEATURES

* $R_{DS(ON)}$: 0.07Ω (TYP.)
* Low on-resistance
* Rugged avalanche characteristic
* Easy automated surface mount assembly with standard outline
* Low threshold drive

■ SYMBOL



■ ORDERING INFORMATION

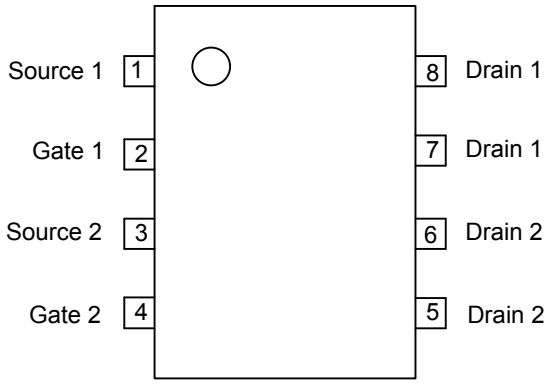
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UD4P20L-S08-R	UD4P20G-S08-R	SOP-8	Tape Reel
UD4P20L-S08-T	UD4P20G-S08-T	SOP-8	Tube

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

UD4P20L-S08-R (1) Packing Type (2) Package Type (3) Lead Free	(1) R: Tape Reel, T: Tube (2) S08: SOP-8 (3) G: Halogen Free, L: Lead Free

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■ PIN CONFIGURATION



■ ABSOLUTE MAXIMUM RATINGS (unless otherwise specified.)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage (V_{GS} =0V)		V_{DSS}	-20	V
Drain-Gate Voltage (R_{GS} = 20kΩ)		V_{DGR}	-20	V
Gate-Source Voltage		V_{GSS}	±16	V
Continuous Drain Current (T_C =25°C, Single Operation)		I_D	-4	A
Pulsed Drain Current (Note 2)		I_{DM}	-16	A
Power Dissipation (T_C=25°C)	Dual Operation	P_D	1.6	W
	Single Operation		2	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. Pulse width limited by safe operating area.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	Single Operation	θ_{JA}	62.5	°C/W
	Dual Operation		78	°C/W

Note: When Mounted on 0.5 in^2 pad of 2oz. copper

■ 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}	I_D = -250μA, V_{GS} = 0 V	-20			V
Drain-Source Leakage Current	I_{DSS}	V_{DS} =-20 V, V_{GS} =0 V			-1	μA
Gate- Source Leakage Current	I_{GSS}	V_{GS} = ±16 V, V_{DS}=0 V			±100	nA
ON CHARACTERISTICS (Note 1)						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS} = V_{GS}, I_D = -250μA	-1	-1.6	-2.5	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS} =-10 V, I_D =-2A		70	80	mΩ
		V_{GS} =-4.5 V, I_D =-2A		85	100	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	V_{DS} =-25 V, V_{GS} =0 V f=1MHz		1350		pF
Output Capacitance	C_{OSS}			490		pF
Reverse Transfer Capacitance	C_{RSS}			130		pF
SWITCHING PARAMETERS						
Turn-ON Delay Time	$t_{D(ON)}$	V_{DD}=-15V, I_D=-2A , V_{GS}=-4.5 V, R_G=4.7 Ω		25		ns
Turn-ON Rise Time	t_R			35		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			125		ns
Turn-OFF Fall-Time	t_F			35		ns
Total Gate Charge	Q_G	V_{DD} =-24 V, V_{GS} =-5 V I_D =-4 A		12.5	16	nC
Gate Source Charge	Q_{GS}			5		nC
Gate Drain Charge	Q_{GD}			3		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage (Note 1)	V_{SD}	I_{SD} =-4 A, V_{GS} =0 V			-1.2	V
Maximum Continuous Drain-Source Diode Forward Current	I_{SD}				-4	A
Maximum Pulsed Drain-Source Diode Forward Current (Note 2)	I_{SDM}				-16	A
Reverse Recovery Time	t_{rr}	I_{SD}=-4A, V_{DD}=-15V dI/dt =100A/μs, T_J=150°C		45		ns
Reverse Recovery Charge	Q_{RR}			36		nC

Notes: 1. Pulsed: Pulse duration =300μS, duty cycle≤1.5 %.
2. Pulse width limited by safe operating area.

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