

**80N08**

Preliminary

Power MOSFET**N-CHANNEL 80V (D-S) MOSFET**

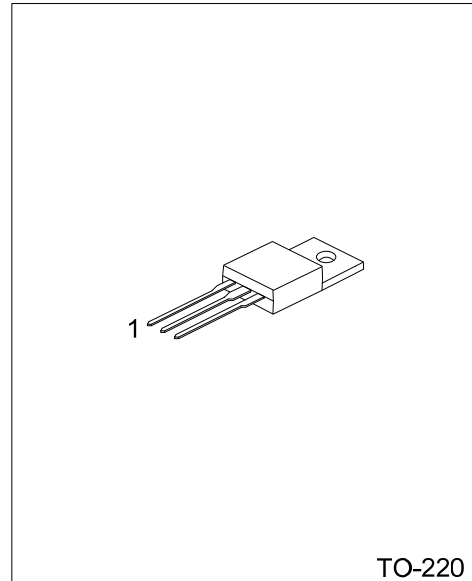
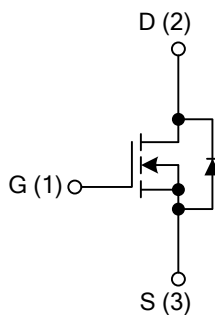
■ DESCRIPTION

The UTC **80N08** is an N-channel MOSFET using UTC trench technology. It can be used in applications, such as power supply (secondary synchronous rectification), industrial and primary switch etc.

■ FEATURES

- * Trench FET Power MOSFETS Technology
- * 100 % R_G and UIS Tested

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
80N08L-TA3-R	80N08G-TA3-R	TO-220	G	D	S	Tube

Note: G: GND, D: Drain, S: Source

80N08G-TA3-T	(1)Packing Type	(1) T: Tube
	(2)Package Type	(2) TA3: TO-220
	(3)Halogen Free	(3) G: Halogen Free, L: Lead Free

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

PARAMETER	SYMBOL	TEST CONDITIONS	RATINGS	UNIT
Continuous Drain Current (Note 1)	I_D	$T_C = 25^\circ\text{C}$, $V_{GS} = 10\text{V}$	80	A
		$T_C = 100^\circ\text{C}$, $V_{GS} = 10\text{V}$ (Note 2)	80	
Pulsed Drain Current (Note 2)	$I_{D,pulse}$	$T_C = 25^\circ\text{C}$	320	A
Avalanche Energy, Single Pulse (Note 2)	E_{AS}	$I_D = 80\text{A}$	810	mJ
Gate Source Voltage (Note 3)	V_{GS}		± 20	V
Power Dissipation	P_{TOT}	$T_C = 25^\circ\text{C}$	300	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	RATINGS	UNIT
Junction to Ambient	θ_{JA}	62	K/W
Junction to Case	θ_{JC}	0.5	K/W

■ 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 =1mA, V _{GS} =0V	80			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =75V, V _{GS} =0V, T _J =25°C		0.01	1	μA
		V _{DS} =75V, V _{GS} =0V, T _J =125°C ²		1	100	
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =20V		1	100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	2.1	3.0	4.0	V
Static Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =80A			12	mΩ
DYNAMIC PARAMETERS (Note 2)						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =25V, f=1.0MHz		4700		pF
Output Capacitance	C _{OSS}			1260		pF
Reverse Transfer Capacitance	C _{RSS}			580		pF
SWITCHING PARAMETERS (Note 2)						
Gate to Source Charge	Q _{GS}	V _{DD} =60V, V _{GS} =0~10V, I _D =80A		25	37	nC
Gate to Drain Charge	Q _{GD}			69	116	nC
Total Gate Charge	Q _G			144	180	nC
Gate Plateau Voltage	V _{plateau}			5.4		V
Turn-ON Delay Time	t _{D(ON)}	V _{DD} =40V, R _G =2.2Ω I _D =80A, V _{GS} =10V		26		ns
Rise Time	t _R			50		ns
Turn-OFF Delay Time	t _{D(OFF)}			61		ns
Fall-Time	t _F			30		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Body-Diode Continuous Current	I _S	T _C =25°C (Note 2)			80	A
Pulsed Current	I _{S, pulse}				320	
Drain-Source Diode Forward Voltage (Note1)	V _{SD}	I _F =80A, V _{GS} =0V, T _J =25°C		0.9	1.3	V
Reverse Recovery Time (Note 2)	t _{RR}	I _F = I _S , dI _F /dt=100A/μs		110	140	ns
Reverse Recovery Charge (Note 2)	Q _{RR}	V _R =40V		470	590	nC

Note: 1. Current is limited by bondwire; with an $\theta_{JC} = 0.5\text{K/W}$ the chip is able to carry 132A at 25°C .

2. Defined by design. Not subject to production test.

3. Qualified at -20V and +20V.

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