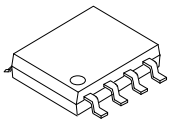
10NN15

Power MOSFET

DUAL N-CHANNEL ENHANCEMENT MODE POWER MOSFET



SOP-8

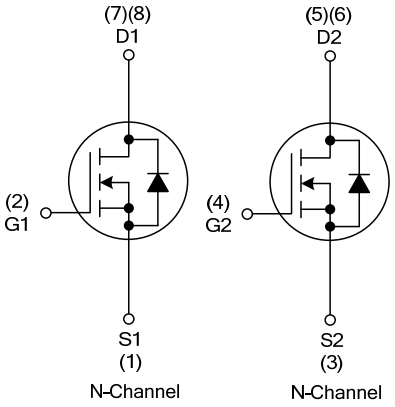
■ DESCRIPTION

The UTC **10NN15** is a Dual N-channel enhancement mode power MOSFET using UTC's perfect technology to provide customers with fast switching, ruggedized device design, low on-resistance and cost-effectiveness.

■ FEATURES

* High switching speed
* Low Gate Charge
* Simple Drive Requirement

■ SYMBOL



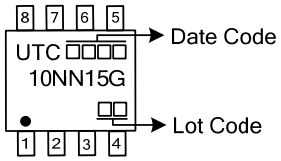
■ ORDERING INFORMATION

Ordering Number	Package	Pin Assignment						Packing
		1	2	3	4	5, 6	7, 8	
10NN15G-S08-R	SOP-8	S1	G1	S2	G2	D2	D1	Tape Reel

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

10NN15G-S08-R (1)Packing Type	(1) R: Tape Reel
(2)Package Type	(2) S08: SOP-8
(3)Green Package	(3) G: Halogen Free and Lead Free

■ MARKING



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■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	150	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current	Continuous (Note 3)	I_D	3	A
	Pulsed (Note 2)	I_{DM}	12	A
Power Dissipation		P_D	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 Max. junction temperature.
3. Surface mounted on 1in2 copper pad of FR4 board, t≤10sec; 135°C/W when mounted on Min. copper pad.

■ THERMAL CHARACTERISTICS

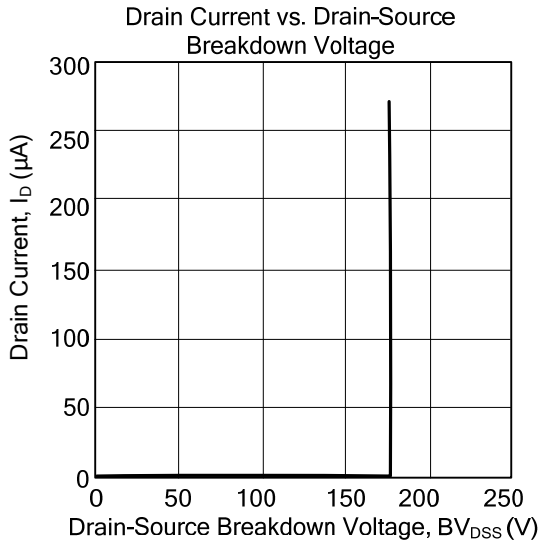
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient (Note 3)	θ_{JA}	62.5	°C/W

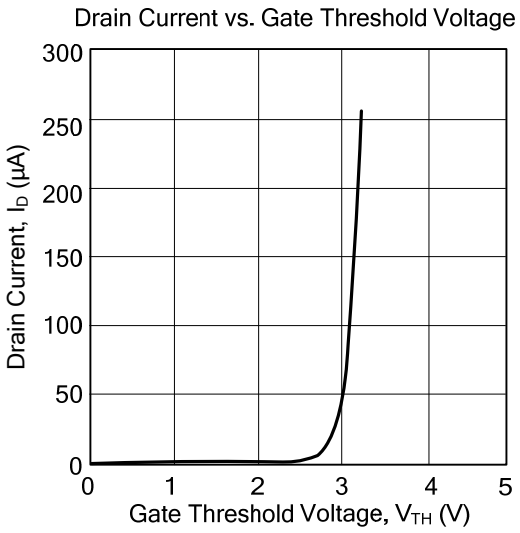
■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise specified)

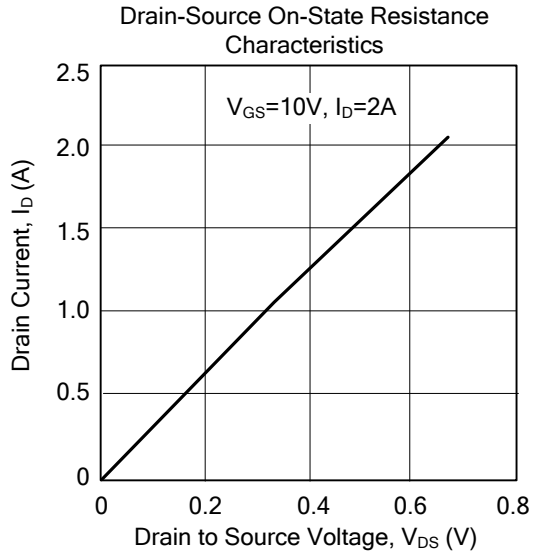
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSS}	I_D=250μA, V_{GS}=0V	150			V
Drain-Source Leakage Current		I_{DSS}	V_{DS}=150V, V_{GS}=0V			10	μA
Gate- Source Leakage Current	Forward	I_{GSS}	V_{GS}=+20V, V_{DS}=0V			+100	nA
	Reverse		V_{GS}=-20V, V_{DS}=0V			-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		$V_{GS(TH)}$	V_{DS}=V_{GS}, I_D=250μA	2		4	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	V_{GS}=10V, I_D=3A			400	mΩ
DYNAMIC PARAMETERS							
Input Capacitance		C_{ISS}	V_{GS}=0V, V_{DS}=25V, f=1.0MHz		420	672	pF
Output Capacitance		C_{OSS}			60		pF
Reverse Transfer Capacitance		C_{RSS}			40		pF
SWITCHING PARAMETERS							
Total Gate Charge		Q_G	V_{GS}=10V, V_{DS}=120V, I_D=3A (Note 1, 2)		10	16	nC
Gate to Source Charge		Q_{GS}			2		nC
Gate to Drain Charge		Q_{GD}			4		nC
Turn-ON Delay Time		$t_{D(ON)}$	V_{DS}=75V, V_{GS}=10V, I_D=3A, R_G=3.3Ω (Note 1, 2)		6.5		ns
Rise Time		t_R			7		ns
Turn-OFF Delay Time		$t_{D(OFF)}$			14		ns
Fall-Time		t_F			35		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Drain-Source Diode Forward Voltage		V_{SD}	I_S=3A, V_{GS}=0V			1.3	V
Body Diode Reverse Recovery Time		t_{RR}	I_S=3A, V_{GS}=0V, dI_F/dt=100A/μs		40		ns
Body Diode Reverse Recovery Charge		Q_{RR}			75		μC

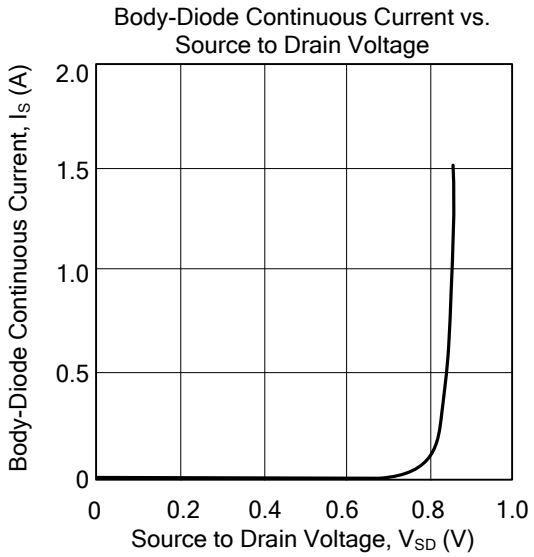
Notes: 1. Pulse width ≤ 300μs, duty cycle ≤ 2%
2. Essentially independent of operating temperature

■ TYPICAL CHARACTERISTICS









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