



12N06Z

Power MOSFET

12A, 60V N-CHANNEL POWER MOSFET

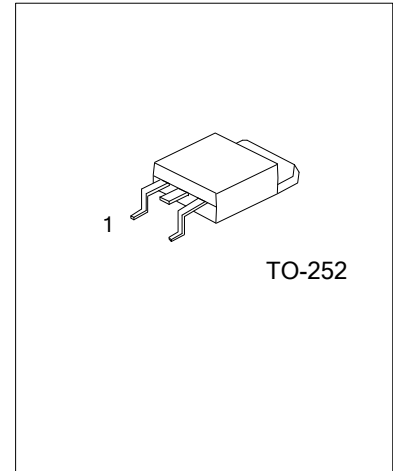
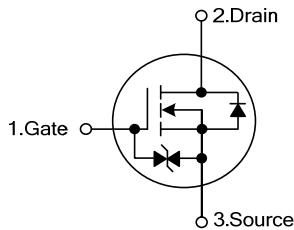
DESCRIPTION

The UTC **12N06Z** is an N-channel enhancement mode Power MOSFET using UTC's advanced technology to provide customers with a minimum on-state resistance, high switching speed and low gate charge.

FEATURES

- * 12A, 60V, $R_{DS(on)} < 0.10\Omega$ @ $V_{GS} = 10V$
- * High switching speed
- * Low gate charge
- * Halogen Free

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
12N06ZL-TN3-R	12N06ZG-TN3-R	TO-252	G	D	S	Tape Reel

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

<p>12N06ZL-TF3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Free</p>		<p>(1) R: Tape Reel</p> <p>(2) TN3: TO-252</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATINGS

PARAMETER SYMBOL			RATINGS	UNIT
Drain-Source Voltage			V_{DSS} 60	V
Gate-Source Voltage			V_{GSS} ±20	V
Drain Current	Continuous T _C = 25°C	I_D 12		A
	Pulsed	I_{DM}	48	A
Total Dissipation at T _C = 25°C			P _{TOT} 30	W
Peak Diode Recovery dv/dt			dv/dt 15	V/ns
Avalanche Energy			E _{AS} 140	mJ
Junction Temperature			T _J -55~+175	°C
Storage Temperature Range			T _{STG} -55~+175	°C

Notes: 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.

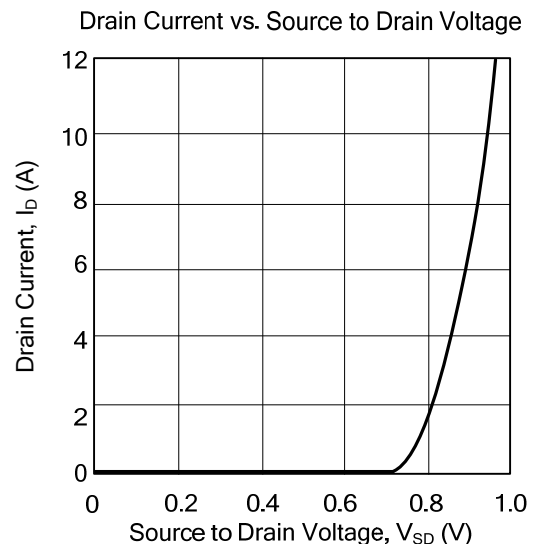
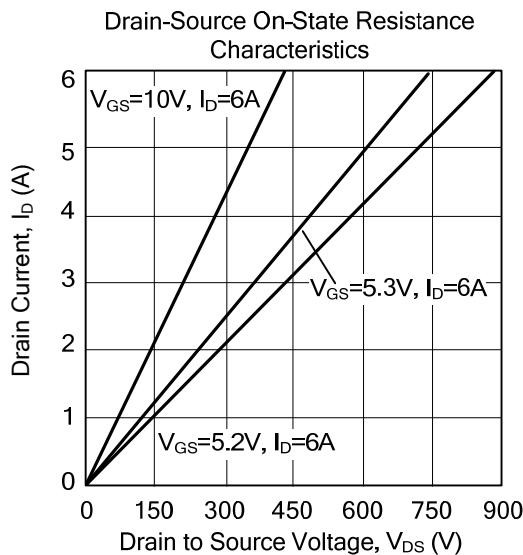
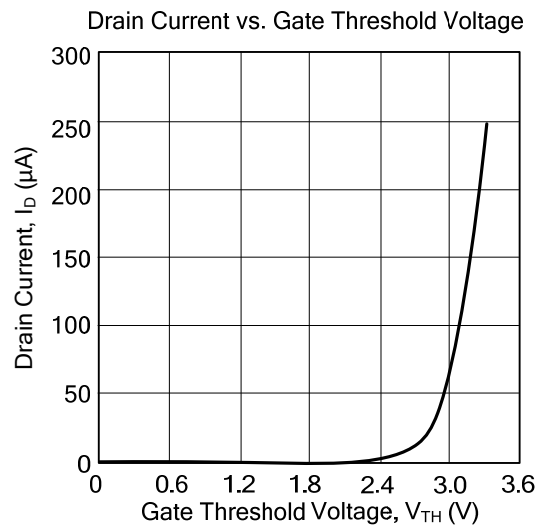
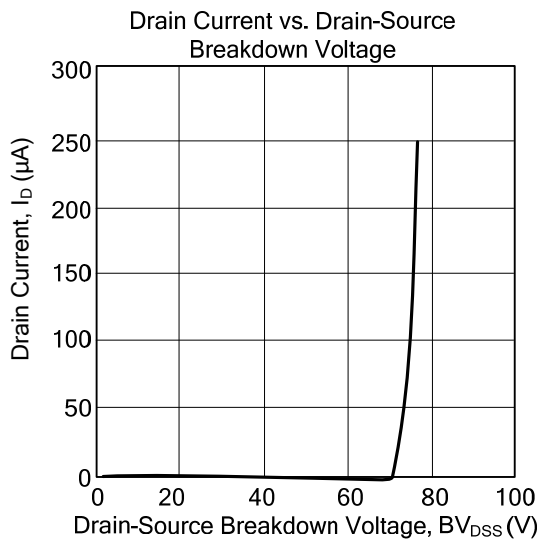
■ THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient Max	θ_{JA}	100	°C/W
Junction to Case Max	θ_{JC} 5		°C/W

■ ELECTRICAL CHARACTERISTICS (T_{CASE}=25°C, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSS}	$I_D=250\mu A$	60			V
Drain-Source Leakage Current		I_{DSS}	$V_{DS}=60V$			1	μA
Gate- Source Leakage Current	Forward	I_{GSS}	$V_{GS}=\pm 20V$			± 10	μA
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		$R_{DS(ON)}$	$V_{DS}=10V, I_D=6A$		0.08	0.1	Ω
On State Drain Current		$I_{D(ON)}$	$V_{GS}=10V, V_{DS}=1V$ 5			30	A
DYNAMIC PARAMETERS							
Input Capacitance		C_{ISS}	$V_{DS}=25V, f=1MHz, V_{GS}=0V$		350		pF
Output Capacitance		C_{OSS}			75		pF
Reverse Transfer Capacitance		C_{RSS}			30		pF
SWITCHING PARAMETERS							
Total Gate Charge		Q_G	$V_{GS}=5V, I_D=12A, V_{DD}=48V$	7.5		10	nC
Gate to Source Charge		Q_{GS}			2.5		nC
Gate to Drain Charge		Q_{GD}			3.0		nC
Turn-ON Delay Time		$t_{D(ON)}$	$V_{DD}=30V, I_D=6A, R_G=4.7\Omega, V_{GS}=0\sim 10V$		10		ns
Rise Time		t_R			35		ns
Turn-OFF Delay Time		$t_{D(OFF)}$			20		ns
Fall-Time		t_F			13		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I_S				12	A
Maximum Body-Diode Pulsed Current		I_{SM}				48	A
Drain-Source Diode Forward Voltage		V_{SD}	$I_S=12A$			1.5	V

■ TYPICAL CHARACTERISTICS



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