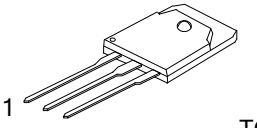
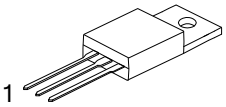
11A, 812V N-CHANNEL POWER MOSFET



TO-3P



TO-230

■ DESCRIPTION

The **UTC 11N80** is an N-Channel power MOSFET, it uses UTC's advanced technology to provide customers with a minimum on-state resistance, low gate charge and high switching speed.

The **UTC 11N80** is suitable for high speed switching applications in power supplies, PWM motor controls, high efficient DC to DC converters and bridge circuits.

■ FEATURES

* $R_{DS(ON)}$ <0.9Ω@V_{GS}=10V
* Low gate charge (typical 60 nC)
* High switching speed

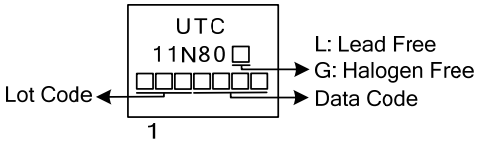
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
11N80L-T3P-T	11N80G-T3P-T	TO-3P	G	D	S	Tube
11N80L-TC3-T	11N80G-TC3-T	TO-230	G	D	S	Tube

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

11N80L-T3P-T (1)Packing Type (2)Package Type (3)Lead Free	(1) T: Tube (2) T3P: TO-3P, TC3: TO-230 (3) L: Lead Free, G: Halogen Free

■ MARKING INFORMATION

PACKAGE	MARKING
TO-3P TO-230	

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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	800	V
Gate-Source Voltage		V_{GSS}	±30	V
Drain Current	Continuous	I_D	11	A
	Pulsed	I_{DM}	11	A
Avalanche Current		I_{AR}	44	A
Avalanche Energy	Single Pulsed	E_{AS}	960	mJ
	Repetitive	E_{AR}	12	mJ
Peak Diode Recovery dv/dt		dv/dt	4.0	V/ns
Power Dissipation (T_C=25°C)	TO-3P	P_D	297	W
	TO-230		156	
Junction Temperature		T_J	-55~+150	°C
Storage Temperature Range		T_{STG}	-55~+150	°C

Note: 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. L=15mH, I_{AS}=11.7A, V_{DD}=50V, R_G=25Ω starting T_C=25°C.

■ THERMAL CHARACTERISTICS

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-3P	θ_{JA}	40	°C/W
	TO-230		62.5	
Junction to Case	TO-3P	θ_{JC}	0.42	°C/W
	TO-230		0.80	

■ ELECTRICAL CHARACTERISTICS

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSS}	I_D=250μA, V_{GS}=0V	800			V
Breakdown Voltage Temperature Coefficient		$\triangle BV_{DSS}/\triangle T_J$	Reference to 25°C, I_D=250μA		1.0		V/°C
Drain-Source Leakage Current		I_{DSS}	V_{DS}=800V, V_{GS}=0V			10	μA
Gate-Source Leakage Current	Forward	I_{GSS}	V_{GS}=+30V, V_{DS}=0V			+100	nA
	Reverse		V_{GS}=-30V, V_{DS}=0V			-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		$V_{GS(TH)}$	V_{DS}=V_{GS}, I_D=250μA	3		5	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	V_{GS}=10V, I_D=5.5A			0.9	Ω
DYNAMIC PARAMETERS							
Input Capacitance		C_{ISS}	V_{DS}=25V, V_{GS}=0V, f=1.0MHz		2530	3290	pF
Output Capacitance		C_{OSS}			215	280	pF
Reverse Transfer Capacitance		C_{RSS}			23	30	pF
SWITCHING PARAMETERS							
Total Gate Charge		Q_G	V_{GS}=10V, V_{DD}=640V, I_D=11A, R_G=25Ω		60	80	nC
Gate to Source Charge		Q_{GS}			13		nC
Gate to Drain Charge		Q_{GD}			25		nC
Turn-ON Delay Time		$t_{D(ON)}$	V_{DD}=400V, I_D=11A, R_G=25Ω, V_{GS}=10V		60	130	ns
Rise Time		t_R			130	270	ns
Turn-OFF Delay Time		$t_{D(OFF)}$			130	270	ns
Fall-Time		t_F			85	180	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I_S				11	A
Maximum Body-Diode Pulsed Current		I_{SM}				44	A
Drain-Source Diode Forward Voltage		V_{SD}	I_S=11.0A, V_{GS}=0V			1.4	V
Body Diode Reverse Recovery Time		t_{RR}	V_{GS}=0V, I_S=11A, d_{IF}/dt=100A/μS		1000		ns
Body Diode Reverse Recovery Charge		Q_{RR}			170		μC