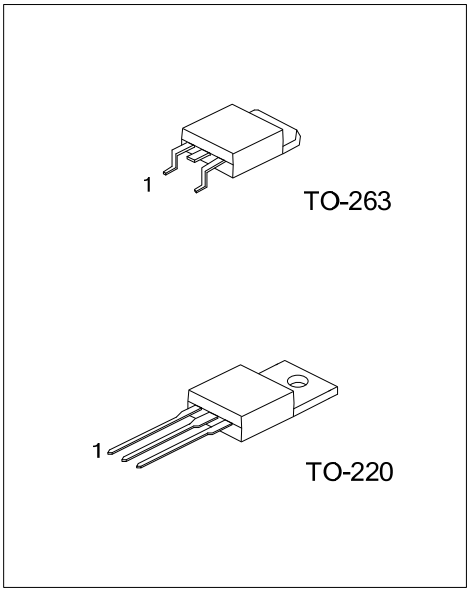
120A, 40V N-CHANNEL POWER MOSFET



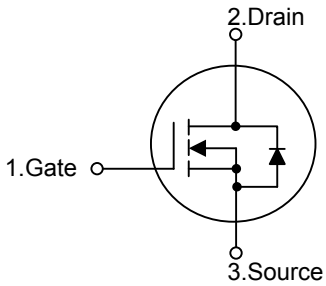
■ DESCRIPTION

The UTC **UTT120N04** is an N-channel enhancement mode Power FET, it uses UTC's advanced technology to provide customers a minimum on-state resistance and high switching speed.

■ FEATURES

* $R_{DS(ON)}$< 3.8mΩ @ V_{GS}=10V, I_D=60A
* High switching speed
* Improved dv/dt capability

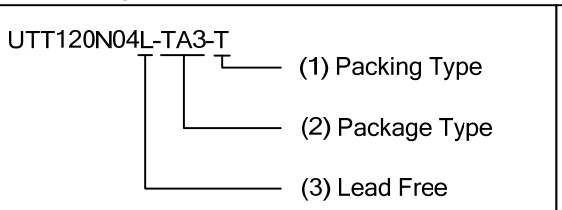
■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT120N04L-TA3-T	UTT120N04G-TA3-T	TO-220	G	D	S	Tube
UTT120N04L-TQ2-T	UTT120N04G-TQ2-T	TO-263	G	D	S	Tube
UTT120N04L-TQ2-R	UTT120N04G-TQ2-R	TO-263	G	D	S	Tape Reel

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



(1) T: Tube, R: Tape Reel

(2) TA3: TO-220, TQ2: TO-263

(3) L: Lead Free, G: Halogen Free

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■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	40	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current	Continuous	I_D	120	A
	Pulsed	I_{DM}	480	A
Avalanche Energy	Single Pulsed	E_{AS}	541.5	mJ
Power Dissipation		P_D	100	W
Junction Temperature		T_J	+150	°C
Storage Temperature Range		T_{STG}	-55~+150	°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 CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	62.5	°C/W
Junction to Case	θ_{JC}	1.5	°C/W

■ ELECTRICAL CHARACTERISTICS

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSS}	I_D=250μA, V_{GS}=0V	40			V
Drain-Source Leakage Current		I_{DSS}	V_{DS}=32V			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		$V_{GS(TH)}$	I_D=250μA	1		3	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	V_{GS}=10V, I_D=60A			3.8	mΩ
DYNAMIC PARAMETERS							
Input Capacitance		C_{ISS}	V_{DS}=25V, V_{GS}=0V, f=1MHz		2890		pF
Output Capacitance		C_{OSS}			575		pF
Reverse Transfer Capacitance		C_{RSS}			310		pF
SWITCHING PARAMETERS							
Total Gate Charge		Q_G	V_{DD}=30V, V_{GS}=10V, I_D=1A, I_G=100μA		160	200	nC
Gate to Source Charge		Q_{GS}			35		nC
Gate to Drain Charge		Q_{GD}			42	60	nC
Turn-ON Delay Time		$t_{D(ON)}$	V_{DD}=30V, I_D=0.5A, R_G=25Ω, V_{GS}=0~10V		17		ns
Rise Time		t_R			140		ns
Turn-OFF Delay Time		$t_{D(OFF)}$			72		ns
Fall-Time		t_F			26		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I_S				120	A
Maximum Body-Diode Pulsed Current		I_{SM}				480	A
Drain-Source Diode Forward Voltage		V_{SD}	I_S=120A			1.28	V

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