



65 Amps, 30 Volts, 3.7mΩ N-CHANNEL POWER MOSFET

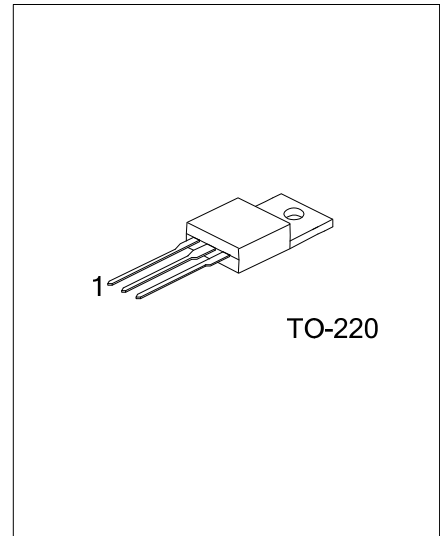
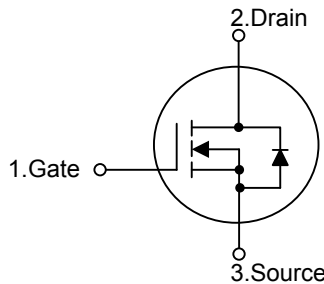
DESCRIPTION

The UTC **UT65N03** is a N-channel Trench technology using UTC's advanced Trench technology to provide customers with a minimum on-state resistance, low gate charge and superior switching performance.

FEATURES

- * $V_{DS}= 30V, I_D=65A,$
- * $R_{DS(ON)}=65m\Omega @ V_{GS}=10V$
 $R_{DS(ON)}=97m\Omega @ V_{GS}=4.5V$
- * Low Gate Charge (Typ. 25nC)
- * High Switching Speed
- * High Power and Current Handling Capability
- * RoHS Compliant

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UT65N03L-TA3-T	UT65N03G-TA3-T	TO-220	G	D	S	Tube

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

<p>UT65N03L-TA3-T</p>	<p>(1) T: Tube</p> <p>(2) TA3: TO-220</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATINGS (T_C = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V _{DSS}	30	V
Gate-Source Voltage	V _{GSS}	±20	V
Drain Current	Continuous	I _D	65
	Pulsed	I _{DM}	130
Single Pulsed Avalanche Energy	E _{AS}	71.7	mJ
Power Dissipation	P _D	54	W
		0.43	W/°C
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55~+175	°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}	2.3	°C/W

■ ELECTRICAL CHARACTERISTICS (T_C = 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	30			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V			1	μA
Gate- Source Leakage Current	I _{GSS}	V _{GS} =+20V, V _{DS} =0V			+100	nA
		V _{GS} =-20V, V _{DS} =0V			-100	nA
ON CHARACTERISTICS (Note 2)						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	1.3	1.7	3	V
Static Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =30A		6.5	8.4	mΩ
		V _{GS} =4.5V, I _D =30A		9.7	14.6	
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{GS} =0V, f=1MHz, V _{DS} =20V		1177	1400	pF
Output Capacitance	C _{OSS}			555		pF
Reverse Transfer Capacitance	C _{RSS}			218		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q _G	V _{GS} =5V, V _{DS} =10V, I _D =30A		12.2	16	nC
Gate to Source Charge	Q _{GS}			2.95		nC
Gate to Drain Charge	Q _{GD}			6.08		nC
Turn-ON Delay Time	t _{D(ON)}	V _{GS} =10V, V _{DS} =25V, I _D =30A, R _G =3Ω		6.3		ns
Rise Time	t _R			18.6		ns
Turn-OFF Delay Time	t _{D(OFF)}			20.3		ns
Fall-Time	t _F			8.8		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V _{SD}	I _S =20A, V _{GS} =10V		0.85	1.1	V
Maximum Body-Diode Continuous Current	I _S				65	A
Maximum Body-Diode Pulsed Current	I _{SM}				130	A

Note: 1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%.

2. Switching characteristics are independent of operating junction temperatures.

3. L=1.0mH, I_{AS}=12A, V_{DD}=24V, R_G=25Ω, Starting T_J=25°C.

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