



UF9Z24

Power MOSFET

12A, 55V P-CHANNEL POWER MOSFET

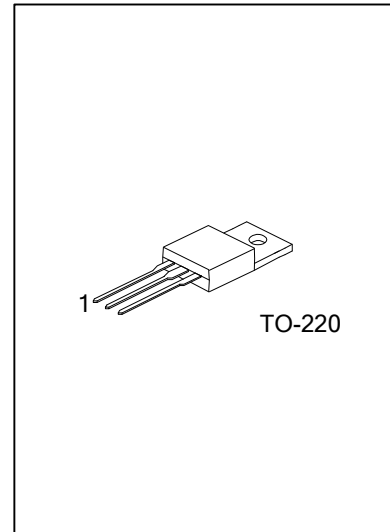
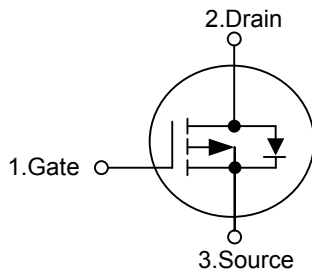
DESCRIPTION

The UTC **UF9Z24** is a P-channel power MOSFET using UTC's advanced technology to provide the customers with high switching speed, cost-effectiveness and minimum on-state resistance. It can also withstand high energy in the avalanche.

FEATURES

- * $R_{DS(ON)}=175m\Omega$ $V_{GS}=-55V$, $I_D=-12A$
- * High Switching Speed

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UF9Z24L-TA3-T	UF9Z24G-TA3-T	TO-220	G	D	S	Tube

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

<p>UF9Z24L-TA3-T</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Free</p>	<p>(1) R: Tape Reel, 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_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V _{DSS}	-55	V
Gate-Source Voltage		V _{GSS}	±20	V
Drain Current	Continuous T _C =25°C	I _D	-12	A
	Pulsed	I _{DM}	-48	A
Single Pulsed Avalanche Current (L=0.1mH)		I _{AS}	-7.2	A
Single Pulsed Avalanche Energy (L=0.1mH)(Note 1)		E _{AS}	96	mJ
Power Dissipation		P _D	38	W
Junction Temperature		T _J	+150	°C
Storage Temperature		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 DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ _{JA}	62	°C/W
Junction to Case	θ _{JC}	3.3	°C/W

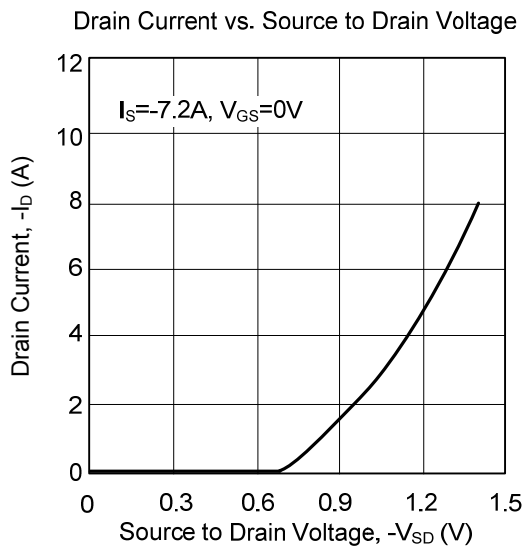
Notes: 1. Duty cycle ≤ 1 %.

■ 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	-55			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =-55V, V _{GS} =0V			-25	μA
Gate-Source Leakage Current	I _{GSS}	Forward			+100	nA
		Reverse			-100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =-250μA	-2.0		-4.0	V
Static Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-12A (Note 1)			0.175	Ω
On State Drain Current (Note 1)	I _{D(ON)}	V _{GS} =-10V, V _{DS} =-5V	-12			A
DYNAMIC PARAMETERS (Note 2)						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =-25V, f=1.0MHz (Note 2)		350		pF
Output Capacitance	C _{OSS}			170		pF
Reverse Transfer Capacitance	C _{RSS}			92		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q _G	V _{GS} =-10V, V _{DS} =-44V, I _D =-7.2A (Note 3)			19	nC
Gate to Source Charge	Q _{GS}				5.1	nC
Gate to Drain Charge	Q _{GD}				10	nC
Turn-ON Delay Time	t _{D(ON)}	V _{DD} =-28V, I _D =-7.2A, R _G =24Ω , R _D =3.7Ω (Note 3)		13		ns
Rise Time	t _R			55		ns
Turn-OFF Delay Time	t _{D(OFF)}			23		ns
Fall-Time	t _F			37		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS (Note 2)						
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 _F =-12A, V _{GS} =0V (Note 1)			-1.6	V

Notes: 1. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2 %.
 2. Guaranteed by design, not subject to production testing.
 3. Independent of operating temperature.

■ TYPICAL CHARACTERISTICS



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