

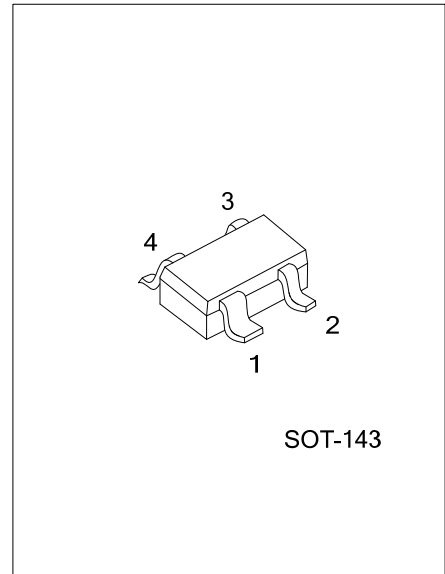


UBSS83

Preliminary

POWER MOSFET

**MOSFET N-CHANNEL
ENHANCEMENT SWITCHING
TRANSISTOR**



■ DESCRIPTION

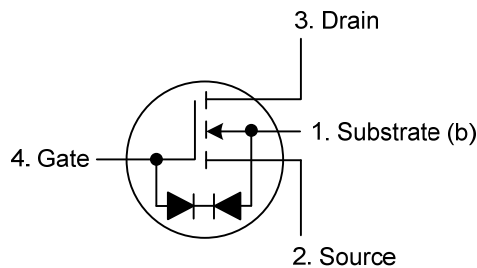
The UTC **UBSS83** is a MOSFET N-channel enhancement switching transistor, it uses UTC's advanced technology to provide customers with a minimum on-state resistance, etc.

The UTC **UBSS83** is suitable for analog and/or digital switch and switch driver.

■ FEATURES

- * Low ON resistance
- * Low capacitances

■ SYMBOL



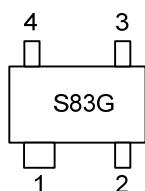
■ ORDERING INFORMATION

Ordering Number	Package	Pin Assignment				Packing
		1	2	3	4	
UBSS83G-AD4-R	SOT-143	B	S	D	G	Tape Reel

Note: Pin Assignment: G: Gate D: Drain S: Source B: Substrate (b)

<p>UBSS83G-AD4-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Green Package 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) AD4: SOT-143 (3) G: Halogen Free and Lead Free
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■ MARKING



■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DSS}	10	V
Source-Drain Voltage	V_{SD}	10	V
Drain-Substrate Voltage	V_{DB}	15	V
Source-Substrate Voltage	V_{SB}	15	V
Drain Current (DC)	I_D	50	mA
Power Dissipation ($T_A=25^\circ\text{C}$)	P_{TOT}	230	mW
Junction Temperature	T_J	125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65~+150	$^\circ\text{C}$

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 RESISTANCE

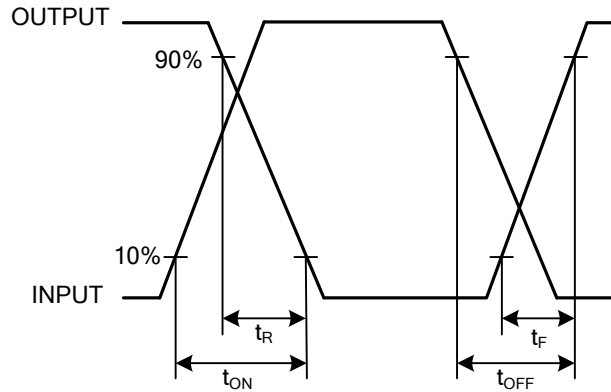
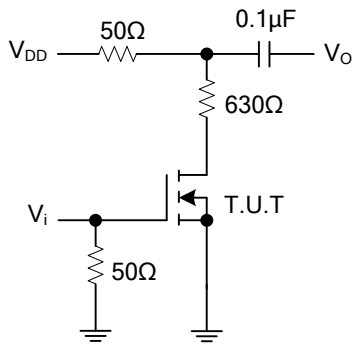
PARAMETER	SYMBOL	VALUE	UNIT
Junction to Ambient in Free Air	θ_{JA}	430	K/W

Note: Device mounted on a ceramic substrate of 8mm×10mm×0.7mm.

■ ELECTRICAL CHARACTERISTICS ($T_{AMB}=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	BV_{DSX}	$I_D=10\text{nA}$, $V_{GS}=V_{BS}=-5\text{V}$	10			V
Source-Drain Breakdown Voltage	BV_{SDX}	$V_{GD}=V_{BD}=-5\text{V}$, $I_D=10\text{nA}$	10			V
Drain-Substrate Breakdown Voltage	BV_{DBO}	$V_{GB}=0$, $I_D=10\text{nA}$, Open Source	15			V
Source-Substrate Breakdown Voltage	BV_{SBO}	$V_{GB}=0$, $I_D=10\text{nA}$, Open Drain	15			V
Drain-Source Leakage Current	$I_{D\text{soff}}$	$V_{GS}=V_{BS}=-2\text{V}$, $V_{DS}=6.6\text{V}$			10	nA
Source-Drain Leakage Current	$I_{S\text{Doff}}$	$V_{GD}=V_{BD}=-2\text{V}$, $V_{SD}=6.6\text{V}$			10	nA
Gate-Source Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}$, $V_{SB}=0$, $I_D=1\mu\text{A}$	0.1		2.0	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=5\text{V}$, $I_D=0.1\text{mA}$, $V_{SB}=0$			70	Ω
		$V_{GS}=10\text{V}$, $I_D=0.1\text{mA}$, $V_{SB}=0$			45	Ω
		$V_{GS}=3.2\text{V}$, $I_D=0.1\text{mA}$, $V_{SB}=6.8\text{V}$		80	120	Ω
Forward Transconductance	g_{FS}	$V_{DS}=10\text{V}$, $V_{SB}=0$, $I_D=20\text{mA}$, $f=1\text{kHz}$	10	15		mS
Gate-Substrate Zener Voltages	$V_{Z(1)}$	$V_{DB}=V_{SB}=0$, $-I_G=10\mu\text{A}$	12.5			V
	$V_{Z(2)}$	$V_{DB}=V_{SB}=0$, $+I_G=10\mu\text{A}$	12.5			V
Input Capacitance	C_{ISS}	$V_{GS}=V_{BS}=-15\text{V}$, $V_{DS}=10\text{V}$, $f=1\text{MHz}$		1.5		pF
Output Capacitance	C_{OSS}			1.0		pF
Feed-Back Capacitance	C_{RSS}			0.6		pF
Switching Times	t_{ON}	$V_{DD}=10\text{V}$, $V_i=5\text{V}$		1.0		ns
	t_{OFF}			5.0		ns

■ TEST CIRCUITS AND WAVEFORMS



Switching Times Test Circuit and Input and Output Waveforms.

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