

# Super323™ SOT323 NPN SILICON POWER (SWITCHING) TRANSISTOR

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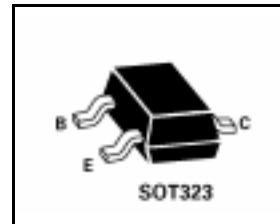
ZUMT619

## FEATURES

- \* **500mW POWER DISSIPATION**
- \* **I<sub>C</sub> CONT 1A**
- \* **2A Peak Pulse Current**
- \* **Excellent H<sub>FE</sub> Characteristics Up To 2A (pulsed)**
- \* **Extremely Low Equivalent On Resistance; R<sub>CE(sat)</sub>**

## APPLICATIONS

- \* LCD backlighting inverter circuits
- \* Boost functions in DC-DC converters



DEVICE TYPE	COMPLEMENT	PARTMARKING	R <sub>CE(sat)</sub>
ZUMT619	ZUMT720	T63	<b>160mΩ at 1A</b>

## ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	50	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Peak Pulse Current**	I <sub>CM</sub>	2	A
<b>Continuous Collector Current</b>	I <sub>C</sub>	<b>1.0</b>	A
Base Current	I <sub>B</sub>	200	mA
<b>Power Dissipation at T<sub>amb</sub>=25°C</b>	P <sub>tot</sub>	<b>385 †</b> <b>500 ‡</b>	mW
Operating and Storage Temperature Range	T <sub>j</sub> ;T <sub>stg</sub>	-55 to +150	°C

† Recommended P<sub>tot</sub> calculated using FR4 measuring 10 x 8 x 0.6mm (still air).

‡ Maximum power dissipation is calculated assuming that the device is mounted on FR4 size 25x25x0.6mm and using comparable measurement methods adopted by other suppliers.

# ZUMT619

## ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ C$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50			V	$I_C = 100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	50			V	$I_C = 10mA^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E = 100\mu A$
Collector Cut-Off Current	$I_{CBO}$			10	nA	$V_{CB} = 40V$
Emitter Cut-Off Current	$I_{EBO}$			10	nA	$V_{EB} = 4V$
Collector Emitter Cut-Off Current	$I_{CES}$			10	nA	$V_{CES} = 40V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	24 60 120 160	35 80 200 270	mV mV mV mV		$I_C = 100mA, I_B = 10mA^*$ $I_C = 250mA, I_B = 10mA^*$ $I_C = 500mA, I_B = 10mA^*$ $I_C = 1A, I_B = 50mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		940	1100	mV	$I_C = 1A, I_B = 50mA^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		850	1100	mV	$I_C = 1A, V_{CE} = 2V^*$
Static Forward Current Transfer Ratio	$h_{FE}$	200 300 200 75 20	420 450 350 130 60			$I_C = 10mA, V_{CE} = 2V^*$ $I_C = 100mA, V_{CE} = 2V^*$ $I_C = 500mA, V_{CE} = 2V^*$ $I_C = 1A, V_{CE} = 2V^*$ $I_C = 1.5A, V_{CE} = 2V^*$
Transition Frequency	$f_T$		215		MHz	$I_C = 50mA, V_{CE} = 10V$ $f = 100MHz$
Output Capacitance	$C_{obo}$		615		pF	$V_{CB} = 10V, f = 1MHz$
Turn-On Time	$t_{(on)}$		150		ns	$V_{CC} = 10V, I_C = 1A$
Turn-Off Time	$t_{(off)}$		425		ns	$I_{B1} = I_{B2} = 100mA$

\*Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤ 2%

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## TYPICAL CHARACTERISTICS

