

UTC X1049A NPN EPITAXIAL SILICON TRANSISTOR

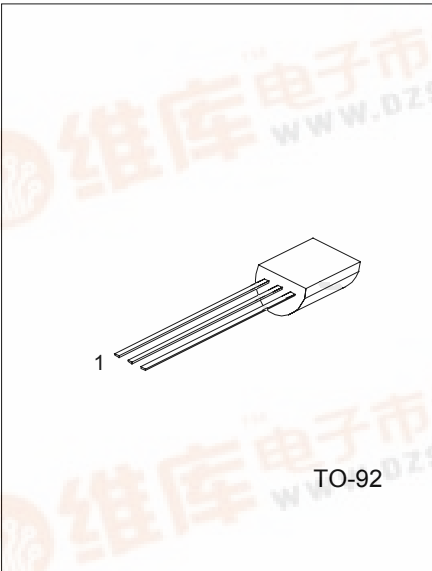
HIGH GAIN TRANSISTOR

FEATURES

- * $V_{CEV} = 80V$
- *High Gain
- *20 Amps pulse current

APPLICATIONS

- *LCD Backlight converters
- *Emergency lighting
- *DC-DC converters



1:EMITTER 2:BASE 3:COLLECTOR

ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}C$)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	80	V
Collector-Emitter Voltage		V_{CEO}	25	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current	DC	I_c	4	A
	Pulse		20	
Base Current		I_B	500	mA
Power Dissipation		P_D	1	W
Junction Temperature		T_j	-55 ~ +200	$^{\circ}C$
Storage Temperature		T_{stg}	-55 ~ +200	$^{\circ}C$

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}C$ unless otherwise specified).

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	V_{CBO}	$I_c=100\mu A$	80	120		V
Collector-Emitter Breakdown Voltage	V_{CEO}	$I_c=10mA$	25	35		V
Collector-Emitter Breakdown Voltage	V_{CES}	$I_c=100\mu A$	80	120		V
Collector-Emitter Breakdown Voltage	V_{CEV}	$I_c=100\mu A, V_{EB}=1V$	80	120		V
Emitter-Base Breakdown Voltage	V_{EBO}	$I_E=100\mu A$	5	8.75		V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=50V$		0.3	10	nA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=4V$		0.3	10	nA
Collector Emitter Cut-Off Current	I_{CES}	$V_{CES}=50V$		0.3	10	nA

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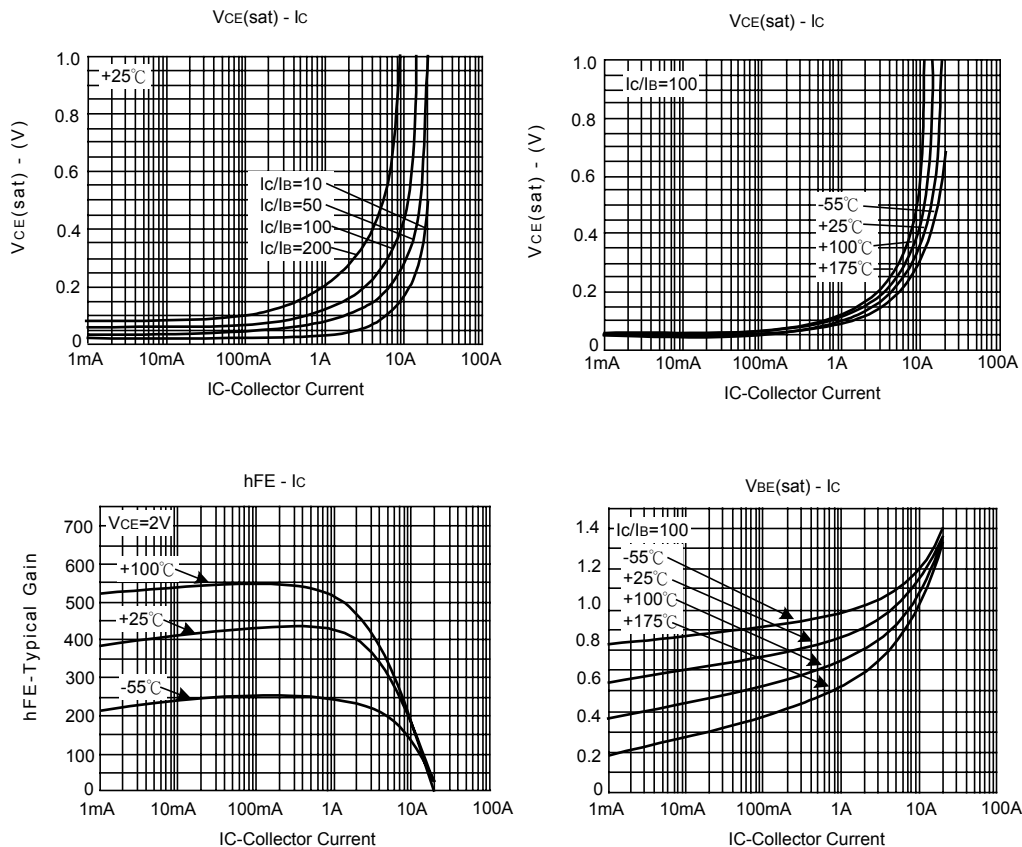


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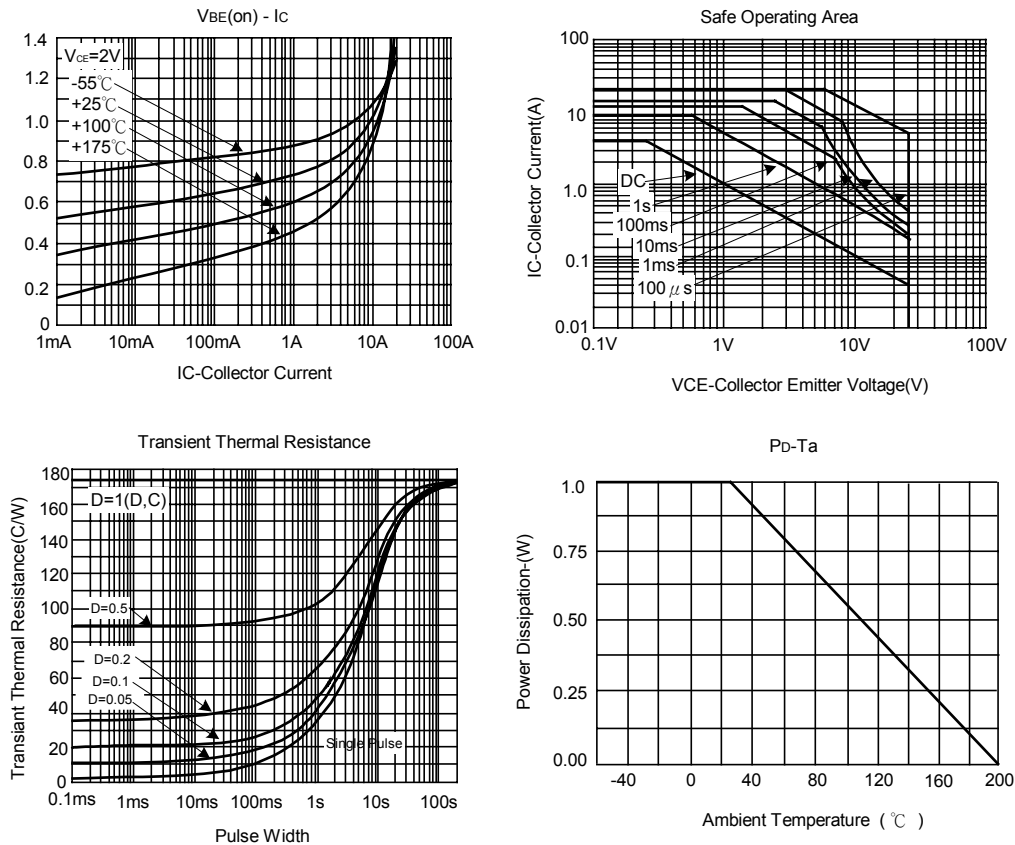
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.5A, I_B=10mA^*$ $I_C=1A, I_B=10mA^*$ $I_C=2A, I_B=10mA^*$ $I_C=4A, I_B=50mA^*$		30 60 125 155	70 130 280 400	mV
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=4A, I_B=50mA^*$		890	980	mV
Base-Emitter Turn-On Voltage	$V_{BE(on)}$	$I_C=4A, V_{CE}=2V^*$		820	920	mV
DC Current Gain	h_{FE}	$I_C=10mA, V_{CE}=2V^*$ $I_C=0.5A, V_{CE}=2V^*$ $I_C=1A, V_{CE}=2V^*$ $I_C=2A, V_{CE}=2V^*$ $I_C=20A, V_{CE}=2V^*$	250 300 300 200 7	430 450 450 350	1200	
Transition Frequency	f_T	$I_C=50mA, V_{CE}=10V, f=50MHz$		180		MHz
Output Capacitance	C_{obo}	$V_{CB}=10V, f=1MHz$		45	60	pF
Turn - On Time	t_{on}	$I_C=4A, I_B=40mA, V_{CC}=10V$		125		ns
Turn - Off Time	t_{off}	$I_C=4A, I_B=\pm 40mA, V_{CC}=10V$		380		ns

*Measured under pulsed conditions. Pulse width=300 μ s. Duty cycle $\leq$ 2%

TYPICAL CHARACTERISTICS



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