



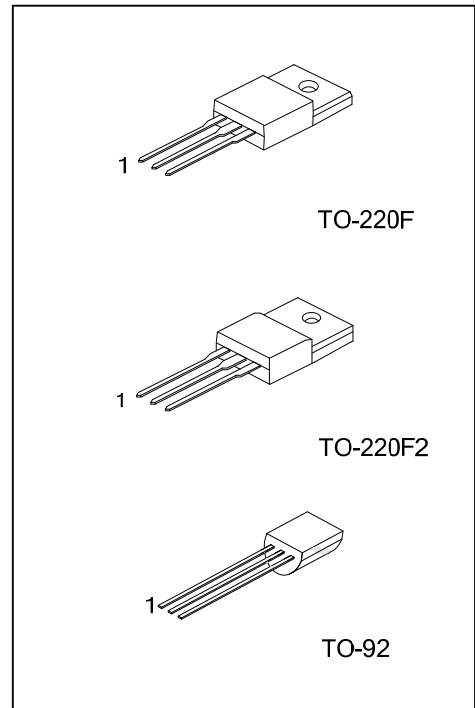
X1049A

NPN SILICON TRANSISTOR

HIGH GAIN TRANSISTOR

FEATURES

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



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
X1049AL-TF3-T	X1049AG-TF3-T	TO-220F	B	C	E	Tube
X1049AL-TF2-T	X1049AG-TF2-T	TO-220F2	B	C	E	Tube
X1049AL-T92-B	X1049AG-T92-B	TO-92	E	B	C	Tape Box
X1049AL-T92-K	X1049AG-T92-K	TO-92	E	B	C	Bulk

X1049AL-TF3-T (1) Packing Type (2) Package Type (3) Lead Free	(1) T: Tube, B: Tape Box, K: Bulk (2) TF3: TO-220F, TF2: TO-220F2, T92: TO-92 (3) L: Lead Free, G: Halogen Free
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MARKING

TO-220F / TO-220F2	TO-92
UTC X1049A Lot Code 1 L: Lead Free G: Halogen Free Data Code	UTC X1049A 1 L: Lead Free G: Halogen Free Data Code

■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

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	A
Base Current		I _B	500	mA
Power Dissipation (T _A =25°C)	TO-220F	P _D	2	W
	TO-220F2		2.1	
	TO-92		1	
Junction Temperature		T _J	125	°C
Operating Temperature		T _{OPR}	-20 ~ +85	°C
Storage Temperature		T _{STG}	-40 ~ +150	°C

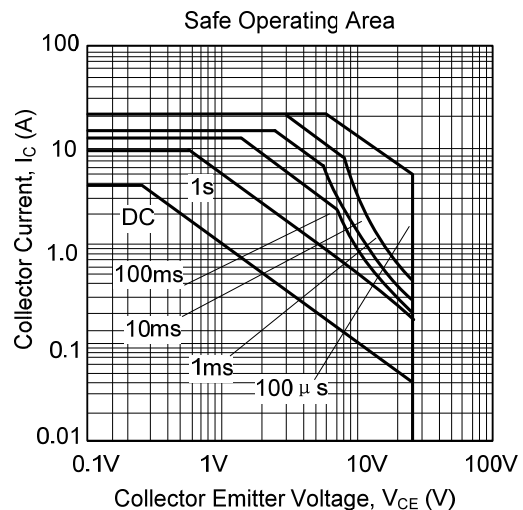
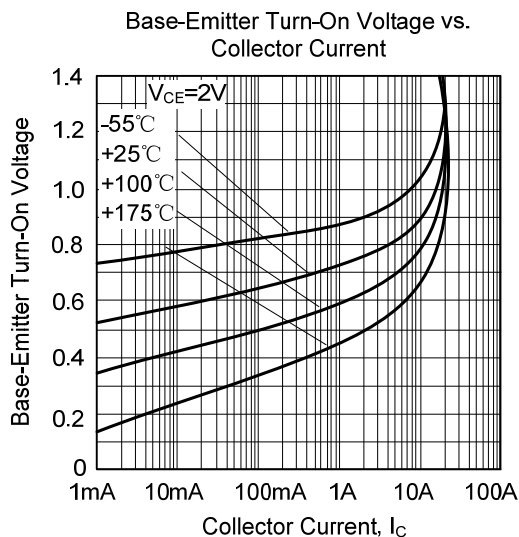
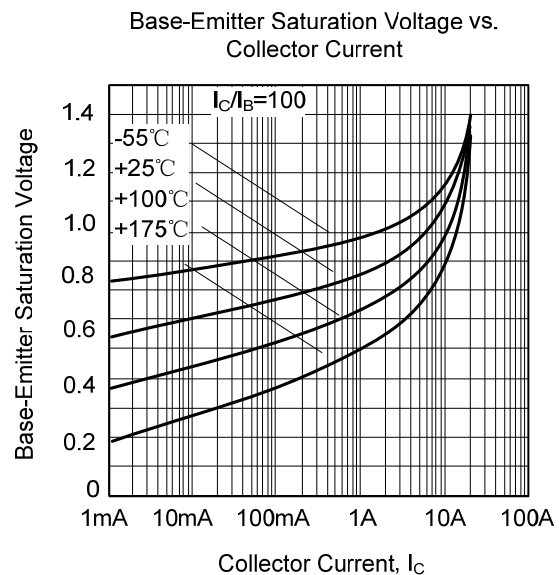
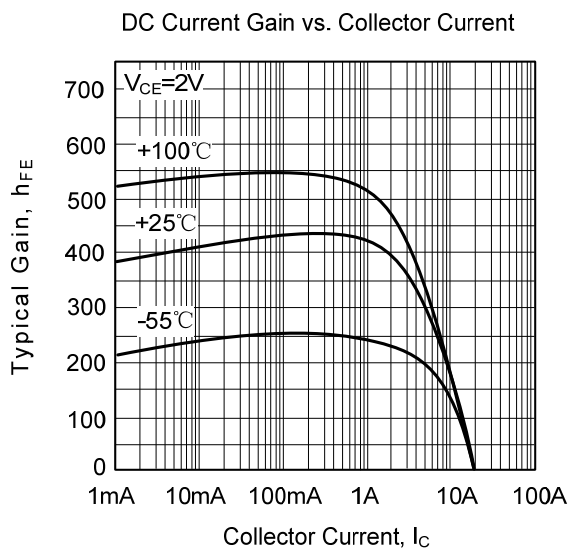
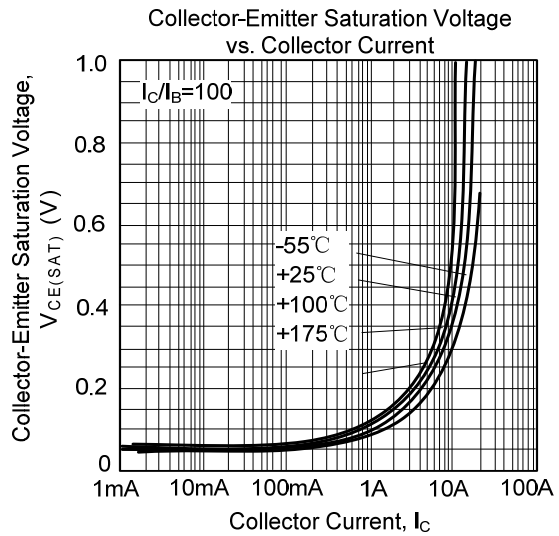
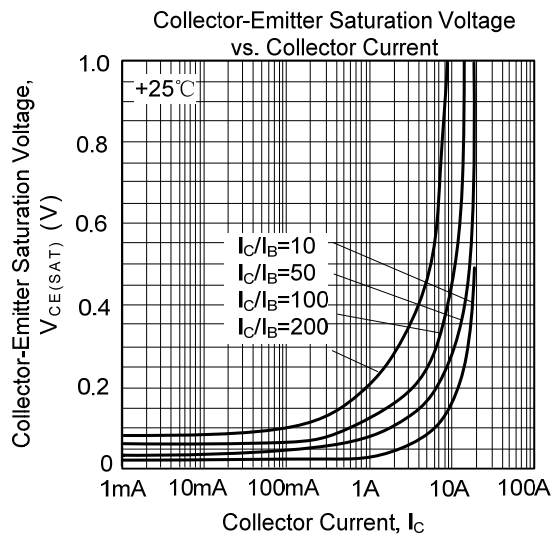
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

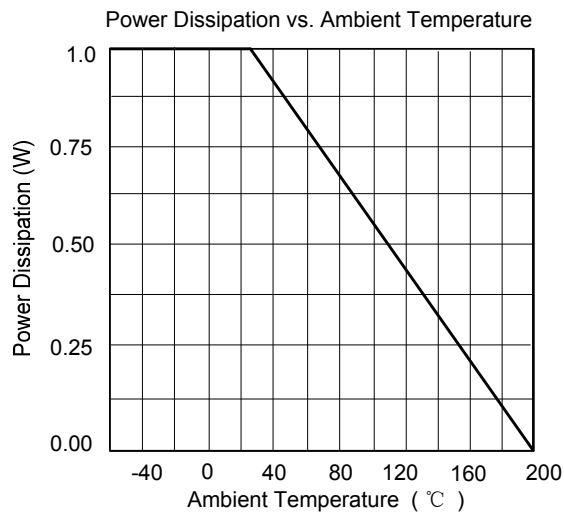
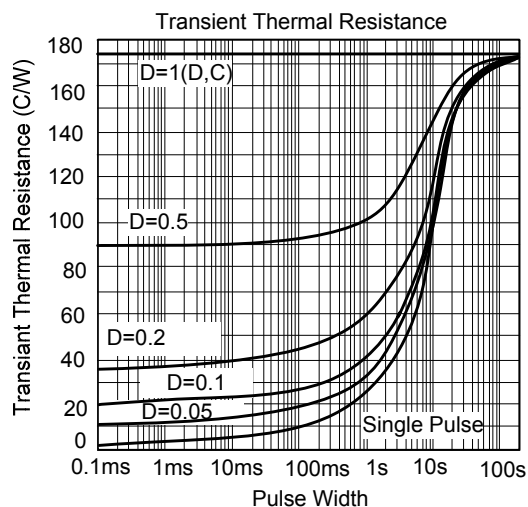
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	V _{CBO}	I _C =100μA	80	120		V
Collector-Emitter Breakdown Voltage	V _{CEO}	I _C =10mA	25	35		V
Collector-Emitter Breakdown Voltage	V _{CES}	I _C =100μA	80	120		V
Collector-Emitter Breakdown Voltage	V _{CEV}	I _C =100μA, V _{EB} =1V	80	120		V
Emitter-Base Breakdown Voltage	V _{EBO}	I _E =100μA	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
Collector-Emitter Saturation Voltage (Note)	V _{CE(SAT)}	I _C =0.5A, I _B =10mA		30	70	mV
		I _C =1A, I _B =10mA		60	130	
		I _C =2A, I _B =10mA		125	280	
		I _C =4A, I _B =50mA		155	400	
Base-Emitter Saturation Voltage (Note)	V _{BE(SAT)}	I _C =4A, I _B =50mA		890	980	mV
Base-Emitter Turn-On Voltage (Note)	V _{BE(ON)}	I _C =4A, V _{CE} =2V		820	920	mV
DC Current Gain (Note)	h _{FE}	I _C =10mA, V _{CE} =2V	250	430		
		I _C =0.5A, V _{CE} =2V	300	450		
		I _C =1A, V _{CE} =2V	300	450	1200	
		I _C =4A, V _{CE} =2V	200	350		
		I _C =20A, V _{CE} =2V	7			
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 =±40mA, V _{CC} =10V		380		ns

Note: Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤2%

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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