



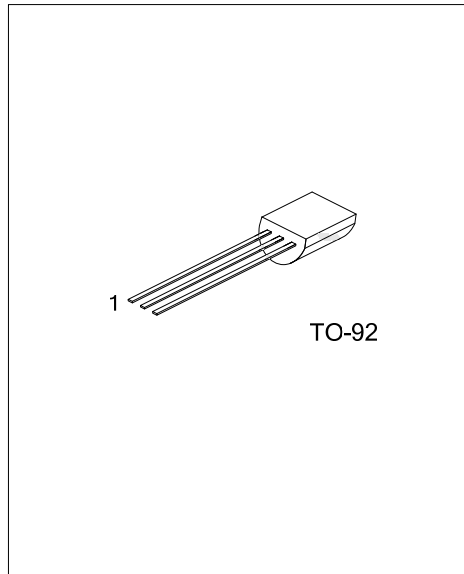
MJE13001-P

NPN SILICON TRANSISTOR

NPN SILICON POWER TRANSISTOR

■ FEATURES

- * Collector-base voltage: $V_{(BR)CBO}=600V$
- * Collector current: $I_C=0.2A$



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MJE13001-PL-x-T92-B	MJE13001-PG-x-T92-B	TO-92	B	C	E	Tape Box
MJE13001-PL-x-T92-K	MJE13001-PG-x-T92-K	TO-92	B	C	E	Bulk
MJE13001-PL-x-T92-A-B	MJE13001-PG-x-T92-A-B	TO-92	E	C	B	Tape Box
MJE13001-PL-x-T92-A-K	MJE13001-PG-x-T92-A-K	TO-92	E	C	B	Bulk

<p>MJE13001-PL-x-AB3-A-B</p>	<p>(1) Packing Type (2) Pin Assignment (3) Package Type (4) Rank (5) Lead Free</p>	<p>(1) B: Tape Box, K: Bulk (2) refer to Pin Assignment (3) T92: TO-92 (4) x: refer to Classification of h_{FE1} (5) L: Lead Free, G: Halogen Free, Blank: Pb/Sn</p>
------------------------------	--	---

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Emitter Voltage	V_{CEO}	400	V
Collector-Base Voltage	V_{CBO}	600	V
Emitter Base Voltage	V_{EBO}	7	V
Collector Current	I_C	200	mA
Collector Power Dissipation	P_C	750	mW
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.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=100\ \mu\text{A}, I_E=0$	600			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=1\text{mA}, I_B=0$	400			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=100\ \mu\text{A}, I_C=0$	7			V
Base-Emitter Voltage	V_{BE}	$I_E=100\ \text{mA}$			1.1	V
Collector Cutoff Cut-Off Current	I_{CBO}	$V_{CB}=600\text{V}, I_E=0\text{A}$			100	μA
Collector Emitter Cut-Off Current	I_{CEO}	$V_{CE}=400\text{V}, I_B=0$			200	μA
Emitter Cutoff Cut-Off Current	I_{EBO}	$V_{EB}=7\text{V}, I_C=0\text{A}$			100	μA

ON CHARACTERISTICS

DC Current Gain	h_{FE1}^*	$V_{CE}=20\ \text{V}, I_C=20\text{mA}$	10		70	
	h_{FE2}	$V_{CE}=10\text{V}, I_C=0.25\text{mA}$	5			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=10\text{mA}$			0.5	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=50\text{mA}, I_B=10\text{mA}$			1.2	V

SMALL-SIGNAL CHARACTERISTICS

Current Gain Bandwidth Product	f_T	$I_C=20\text{mA}, V_{CE}=20\text{V}, f=1\text{MHz}$	8			MHz
--------------------------------	-------	---	---	--	--	-----

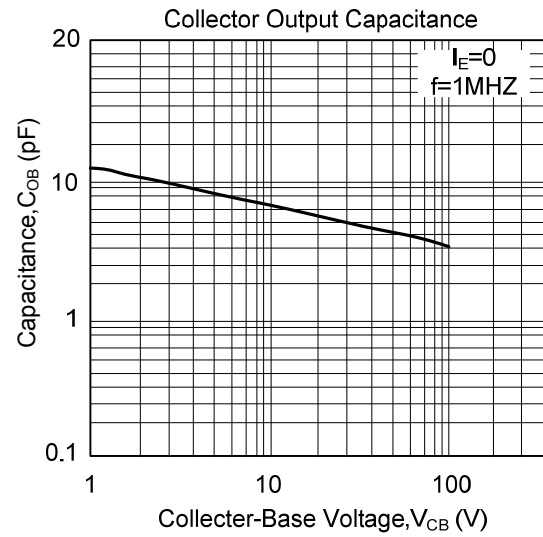
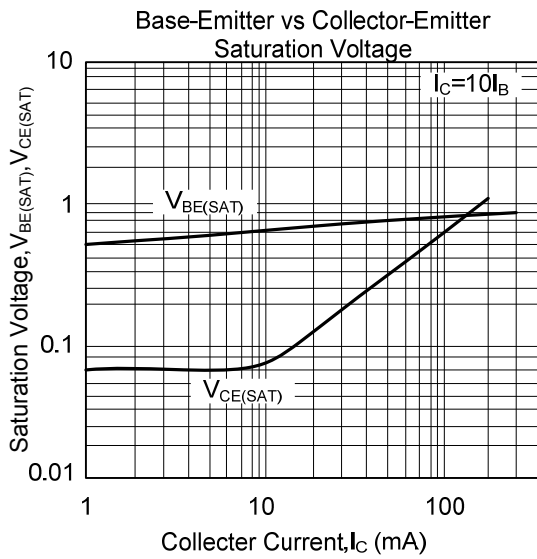
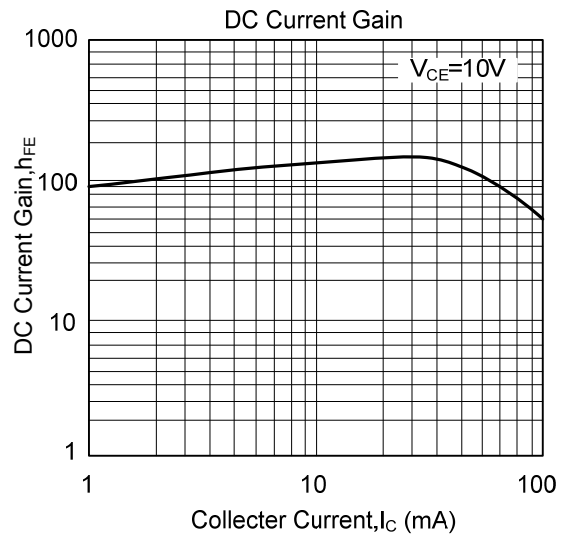
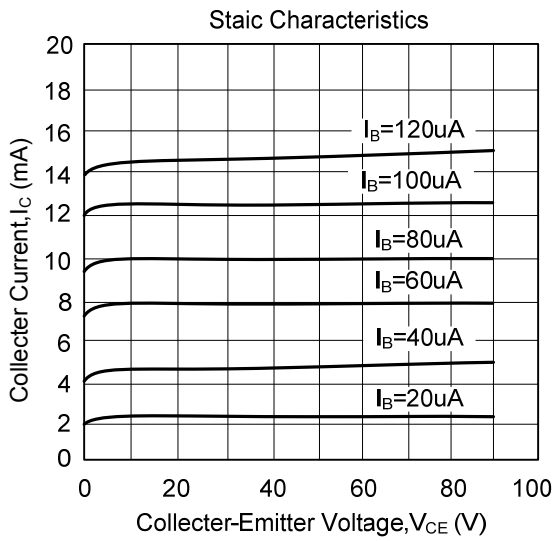
Resistive Load

Storage Time	t_s	$I_C=50\text{mA}, I_{B1}=-I_{B2}=5\text{mA}$,			1.5	μs
Fall Time	t_f	$V_{CC}=45\text{V}$			0.3	μs

■ CLASSIFICATION OF h_{FE1}^*

RANK	A	B	C	D	E	F	G	H	I	J	K	L
RANGE	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70

■ TYPICAL CHARACTERISTICS



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.