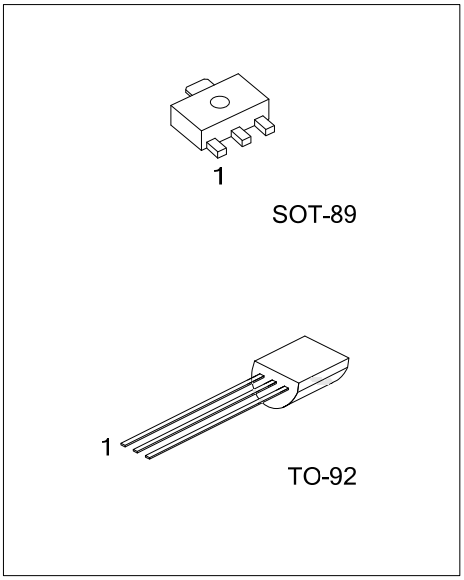
MJE13001

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	
-	MJE13001G-x-AB3-A-R	SOT-89	E	C	B	Tape Reel
-	MJE13001G-x-AB3-F-R	SOT-89	B	C	E	Tape Reel
MJE13001L-x-T92-B	MJE13001G-x-T92-B	TO-92	B	C	E	Tape Box
MJE13001L-x-T92-K	MJE13001G-x-T92-K	TO-92	B	C	E	Bulk
MJE13001L-x-T92-A-B	MJE13001G-x-T92-A-B	TO-92	E	C	B	Tape Box
MJE13001L-x-T92-A-K	MJE13001G-x-T92-A-K	TO-92	E	C	B	Bulk

Note: Pin Assignment: C: Collector B: Base E: Emitter

MJE13001G-x-AB3-A-B (1)Packing Type (2)Pin Assignment (3)Package Type (4)Rank (5)Green Package	(1) B: Tape Box, K: Bulk, R: Tape Reel (2) refer to Pin Assignment (3) AB3: SOT-89, T92: TO-92 (4) x: refer to Classification of h_{FE1} (5) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING

SOT-89	TO-92
□□□□ MJE13001G → Date Code 1	UTC MJE 13001 □ → L: Lead Free □ □□□ → G: Halogen Free Pin Code ← Data Code 1

■ 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	SOT-89	P_C	550	mW
	TO-92		750	
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°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	I_C=100μA, I_E=0	600			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=1mA, I_B=0	400			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=100μA, I_C=0	7			V
Base-Emitter Voltage	V_{BE}	I_E=100 mA			1.1	V
Collector Cutoff Cut-Off Current	I_{CBO}	V_{CB}=600V, I_E=0A			100	μA
Collector Emitter Cut-Off Current	I_{CEO}	V_{CE}=400V, I_B=0			200	μA
Emitter Cutoff Cut-Off Current	I_{EBO}	V_{EB}=7V, I_C=0A			100	μA
ON CHARACTERISTICS						
DC Current Gain	h_{FE1}*	V_{CE}=20 V, I_C=20mA	10		70	
	h_{FE2}	V_{CE}=10V, I_C=0.25mA	5			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=50mA, I_B=10mA			0.5	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	I_C=50mA, I_B=10mA			1.2	V
SMALL-SIGNAL CHARACTERISTICS						
Current Gain Bandwidth Product	f_T	I_C=20mA,V_{CE}=20V,f=1MHz	8			MHz
Resistive Load						
Storage Time	t_S	I_C=50mA, I_{B1}=-I_{B2}=5mA, V_{CC}=45V			1.5	μs
Fall Time	t_F				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