

# MJE240 thru MJE244 NPN (SILICON) MJE250 thru MJE254 PNP

## COMPLEMENTARY SILICON POWER PLASTIC TRANSISTORS

... designed for low power audio amplifier and low-current, high-speed switching applications.

- High Collector-Emitter Sustaining Voltage –  
 $V_{CE(sus)} = 80 \text{ Vdc (Min) – MJE240/2, MJE250/2}$   
 $= 100 \text{ Vdc (Min) – MJE243/4, MJE253/4}$
- High DC Current Gain @  $I_C = 200 \text{ mAdc}$   
 $h_{FE} = 40\text{-}200 \text{ – MJE240, MJE250}$   
 $= 40\text{-}120 \text{ – MJE241, 243, MJE251, 253}$   
 $= 25 \text{ (Min) – MJE242, 44, MJE252, 54}$
- Low Collector-Emitter Saturation Voltage –  
 $V_{CE(sat)} = 0.3 \text{ Vdc (Max) @ } I_C = 500 \text{ mAdc}$
- High Current Gain Bandwidth Product –  
 $f_T = 40 \text{ MHz (Min) @ } I_C = 100 \text{ mAdc}$
- Annular Construction for Low Leakages  
 $I_{CBO} = 100 \text{ nAdc (Max) @ Rated } V_{CB}$

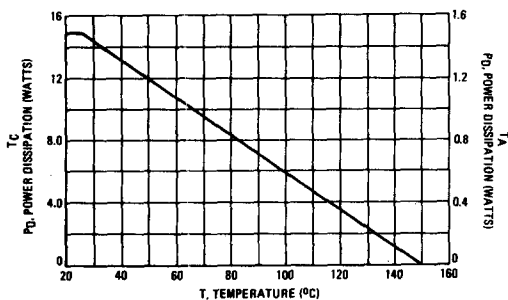
### MAXIMUM RATINGS

Rating	Symbol	MJE240 MJE241 MJE242 MJE250 MJE251 MJE252	MJE243 MJE244 MJE253 MJE254	Unit
Collector-Emitter Voltage	$V_{CEO}$	80	100	Vdc
Collector-Base Voltage	$V_{CB}$	80	100	Vdc
Emitter-Base Voltage	$V_{EB}$		7.0	Vdc
Collector Current – Continuous	$I_C$		4.0	Adc
Peak			8.0	
Base Current	$I_B$		1.0	Adc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$		15	Watts W/ $^\circ\text{C}$
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$		0.012	Watts W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$		-65 to +150	$^\circ\text{C}$

### THERMAL CHARACTERISTICS

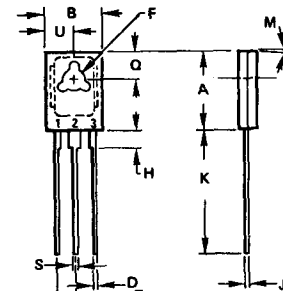
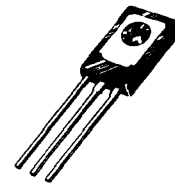
Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$\theta_{JC}$	8.34	$^\circ\text{C/W}$
Thermal Resistance, Junction to Ambient	$\theta_{JA}$	83.4	$^\circ\text{C/W}$

FIGURE 1 – POWER DERATING



## 4 AMPERE POWER TRANSISTORS COMPLEMENTARY SILICON

80, 100 VOLTS  
15 WATTS



STYLE 1  
PIN 1. EMITTER  
2. COLLECTOR  
3. BASE

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	10.80	11.05	0.425	0.435
B	7.49	7.75	0.295	0.305
C	2.41	2.67	0.095	0.105
D	0.51	0.66	0.020	0.026
E	2.92	3.00	0.115	0.118
F	2.31	2.46	0.091	0.097
G	2.16	2.41	0.085	0.095
H	0.38	0.64	0.015	0.025
K	15.38	16.64	0.605	0.655
M	3 $^\circ$ TYP		3 $^\circ$ TYP	
Q	3.76	4.01	0.148	0.158
R	1.14	1.40	0.045	0.055
S	0.64	0.89	0.025	0.035
U	3.68	3.94	0.145	0.155

CASE 77-03