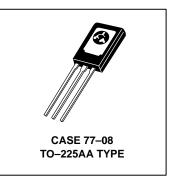
Complementary Silicon Power Transistors

... designed specifically for use with the MC3419 Solid-State Subscriber Loop Interface Circuit (SLIC).

- High Safe Operating Area IS/B @ 40 V, 1.0 s = 0.375 A TO–126
- Collector–Emitter Sustaining Voltage
 VCEO(sus) = 100 Vdc (Min)
- High DC Current Gain
 hFE @ 120 mA, 10 V = 1500 (Min)

MJE270 PNP MJE271

2.0 AMPERE
COMPLEMENTARY
POWER DARLINGTON
TRANSISTORS
100 VOLTS
15 WATTS



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	VCEO	100	Vdc
Collector-Base Voltage	V _{CB}	100	Vdc
Emitter–Base Voltage	V _{EB}	5.0	Vdc
Collector Current — Continuous — Peak	lc	2.0 4.0	Adc
Base Current	IB	0.1	Adc
Total Power Dissipation @ T _C = 25°C Derate above 25°C	P _D	15 0.12	Watts W/°C
Total Power Dissipation @ T _A = 25°C Derate above 25°C	P _D	1.5 0.012	Watts W/°C
Operating and Storage Junction Temperature Range	T _J , T _{stg}	-65 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	R ₀ JC	8.33	°C/W
Thermal Resistance, Junction to Ambient	$R_{ heta JA}$	83.3	°C/W

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ELECTRICAL CHARACTERISTICS ($T_C = 25^{\circ}C$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector–Emitter Sustaining Voltage (1) $(I_C = 10 \text{ mAdc}, I_B = 0)$	VCEO(sus)	100	_	Vdc
Collector Cutoff Current (V _{CE} = 100 Vdc, I _B = 0)	ICEO	_	1.0	mAdc
Collector Cutoff Current (V _{CB} = 100 Vdc, I _E = 0)	ICBO	_	0.3	mAdc
Emitter Cutoff Current (VBE = 5.0 Vdc, I _C = 0)	I _{EBO}	_	0.1	mAdc
SECOND BREAKDOWN				
Second Breakdown Collector Current with Base Forward Biased (V _{CE} = 40 Vdc, t = 1.0 s, non–repetitive)	lS/b	375	_	Adc
ON CHARACTERISTICS (1)	•			
DC Current Gain (I _C = 20 mAdc, V_{CE} = 3.0 Vdc) (I _C = 120 mAdc, V_{CE} = 10 Vdc)	hFE	500 1500	_	_
Collector–Emitter Saturation Voltage (I _C = 20 mAdc, I _B = 0.2 mAdc) (I _C = 120 mAdc, I _B = 1.2 mAdc)	V _{CE(sat)}	_ _	2.0 3.0	Vdc
Base–Emitter On Voltage ($I_C = 120 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$)	VBE(on)	_	2.0	Vdc
DYNAMIC CHARACTERISTICS				
Current Gain — Bandwidth Product (2) (IC = 0.05 Adc, V _{CE} = 5.0 Vdc, f _{test} = 1.0 MHz)	fT	6.0	_	MHz

NOTES

- (1) Pulse Test: Pulse Width $\leq 300 \, \mu s$, Duty Cycle $\leq 2.0\%$.
- (2) $f_T = |h_{fe}| \cdot f_{test}$.

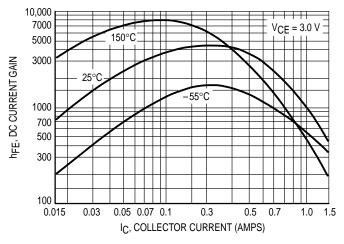


Figure 1. DC Current Gain

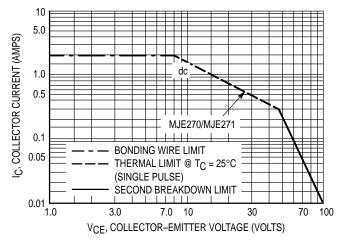
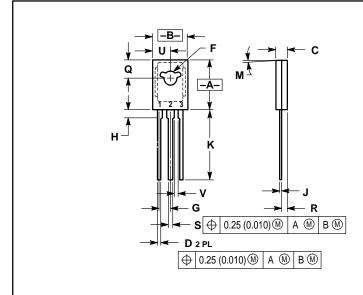


Figure 2. Safe Operating Area

PACKAGE DIMENSIONS



- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

	INCHES		MILLIMETERS		
DIM	MIN	MAX	MIN	MAX	
Α	0.425	0.435	10.80	11.04	
В	0.295	0.305	7.50	7.74	
С	0.095	0.105	2.42	2.66	
D	0.020	0.026	0.51	0.66	
F	0.115	0.130	2.93	3.30	
G	0.094 BSC		2.39 BSC		
Н	0.050	0.095	1.27	2.41	
J	0.015	0.025	0.39	0.63	
K	0.575	0.655	14.61	16.63	
M	5° TYP		5° TYP		
Q	0.148	0.158	3.76	4.01	
R	0.045	0.055	1.15	1.39	
S	0.025	0.035	0.64	0.88	
U	0.145	0.155	3.69	3.93	
٧	0.040		1.02		

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

CASE 77-08 TO-225AA TYPE **ISSUE V**

MJE270 MJE271

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