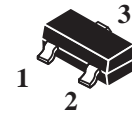
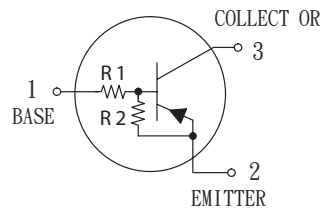


Bias Resistor Transistor PNP Silicon

 Lead(Pb)-Free



SOT-23

Maximum Ratings (T_A=25°C unless otherwise noted)

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V _{CEO}	50	Vdc
Collector-Base Voltage	V _{CBO}	50	Vdc
Collector Current-Continuous	I _C	100	mAdc

Thermal Characteristics

Characteristics	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (1)T _A =25°C Derate above 25°C	P _D	230 (1)	mW
		338 (2)	
		1.8 (1)	mW/°C
		2.7 (2)	
Thermal Resistance, Junction to Ambient	R _{θJA}	540(1) 370(2)	°C/W
Thermal Resistance, Junction to Lead	R _{θJL}	264 (1) 287 (2)	°C/W
Junction and Storage, Temperature Range	T _J ,T _{stg}	-55 to +150	°C

1.FR-4 @ minimum pad

2.FR-4 @ 1.0×1.0 inch Pad

Device Marking

MMUN2135=A6M

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

Characteristic	Symbol	Min	Typ	Max	Unit
----------------	--------	-----	-----	-----	------

OFF CHARACTERISTICS

Collector-Base Cutoff Current ($V_{CB} = 50\text{ V}$, $I_E = 0$)	I_{CBO}	–	–	100	nA _{dc}
Collector-Emitter Cutoff Current ($V_{CE} = 50\text{ V}$, $I_B = 0$)	I_{CEO}	–	–	500	nA _{dc}
Emitter-Base Cutoff Current ($V_{BE} = 6.0\text{ V}$)	I_{EBO}	–	–	0.2	mA _{dc}
Collector-Base Breakdown Voltage ($I_C = 10\ \mu\text{A}$, $I_E = 0$)	$V_{(BR)CBO}$	50	–	–	V _{dc}
Collector-Emitter Breakdown Voltage (Note 3) ($I_C = 2.0\text{ mA}$, $I_B = 0$)	$V_{(BR)CEO}$	50	–	–	V _{dc}

ON CHARACTERISTICS (Note 3)

DC Current Gain ($V_{CE} = 10\text{ V}$, $I_C = 5.0\text{ mA}$)	h_{FE}	80	–	–	
Collector-Emitter Saturation Voltage ($I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$)	$V_{CE(sat)}$	–	–	0.25	V _{dc}
Output Voltage (on) ($V_{CC} = 5.0\text{ V}$, $V_B = 2.5\text{ V}$, $R_L = 1.0\text{ k}\Omega$)	V_{OL}	–	–	0.2	V _{dc}
Output Voltage (off) ($V_{CC} = 5.0\text{ V}$, $V_B = 0.25\text{ V}$, $R_L = 1.0\text{ k}\Omega$)	V_{OH}	4.9	–	–	V _{dc}
Input Resistor	R_1	1.54	2.2	2.86	k Ω
Resistor Ratio	R_1/R_2	0.038	0.047	0.056	

3. Pulse Test: Pulse Width < 300 μs , Duty Cycle < 2.0%

TYPICAL ELECTRICAL CHARACTERISTICS

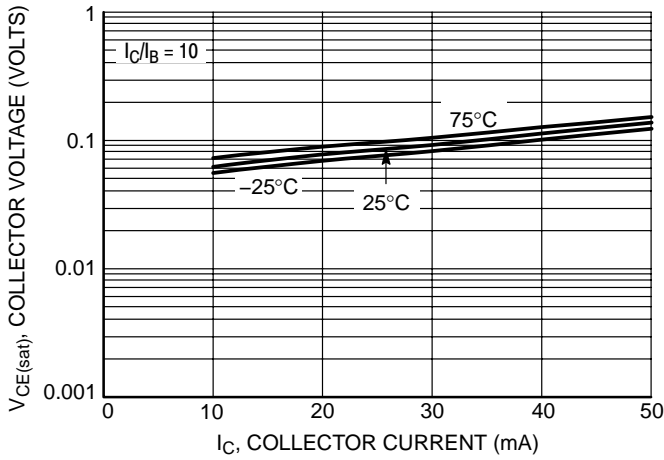


Figure 1. $V_{CE(sat)}$ versus I_C

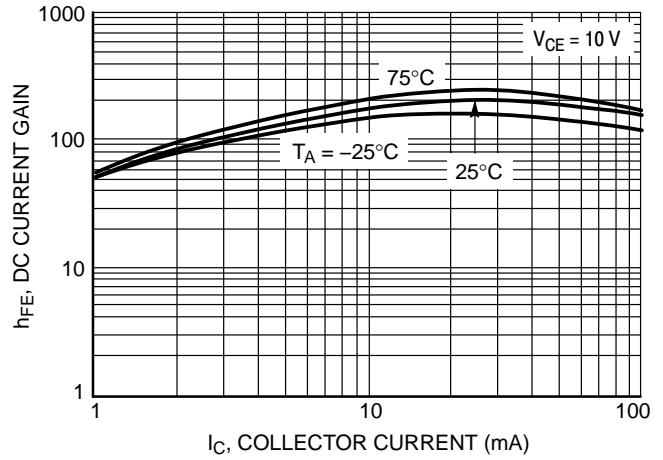


Figure 2. DC Current Gain

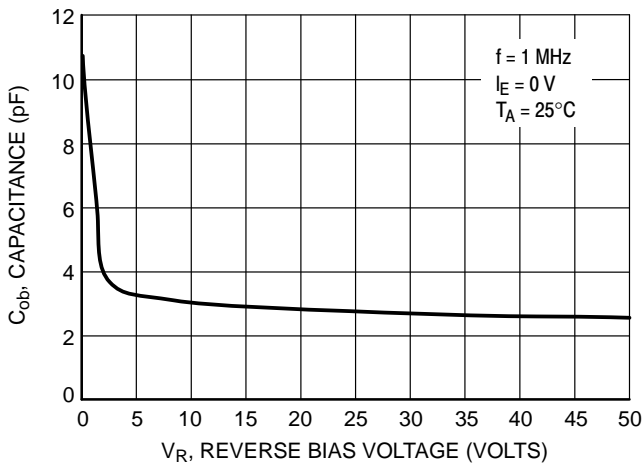


Figure 3. Output Capacitance

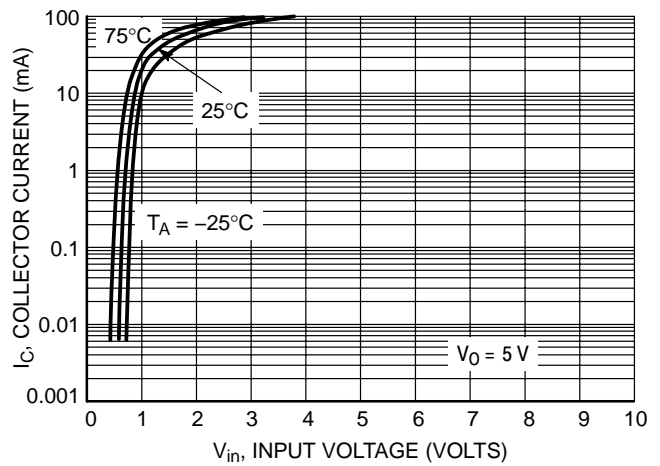


Figure 4. Output Current versus Input Voltage

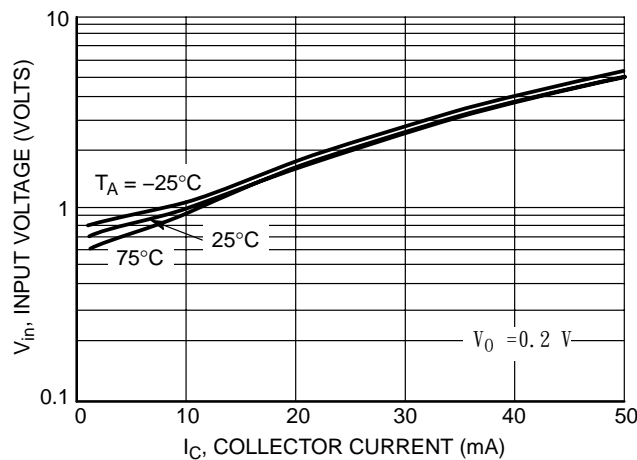


Figure 5. Input Voltage versus Output Current

SOT-23 Package Outline Dimensions

Unit:mm

