M N2134, MM N2134L, M N5134, D A124 E, D A124 M3, N BA124 F3

D (BR)
R1 = 22 Ω
( )

R1

E

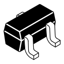
R2

N 2
EM ER
(R ND)

www.onsemi.com

PIN CONNECTIONS

MARKING DIAGRAMS



SC−75
CASE 463
STYLE 1

XXX = Specific Device Code
M = Date Code*
▪

ORDERING INFORMATION

, ,
2

March, 2019 − Rev. 6

Table 2. THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
THERMAL CHARACTERISTICS (SC−59) (MUN2134)			
Total Device Dissipation	P_D		
T_A = 25°C (Note 1)		230	mW
(Note 2)		338	
Derate above 25°C (Note 1)		1.8	mW/°C
(Note 2)		2.7	
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	540	°C/W
(Note 2)		370	
Thermal Resistance, Junction to Lead (Note 1)	$R_{\theta JL}$	264	°C/W
(Note 2)		287	
Junction and Storage Temperature Range	T_J, T_{stg}	−55 to +150	°C
THERMAL CHARACTERISTICS (SOT−23) (MMUN2134L)			
Total Device Dissipation	P_D		
T_A = 25°C (Note 1)		246	mW
(Note 2)		400	
Derate above 25°C (Note 1)		2.0	mW/°C
(Note 2)		3.2	
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	508	°C/W
(Note 2)		311	
Thermal Resistance, Junction to Lead (Note 1)	$R_{\theta JL}$	174	°C/W
(Note 2)		208	
Junction and Storage Temperature Range	T_J, T_{stg}	−55 to +150	°C

AC= 25
Derate above 25°C
(Note 1)
(Note 2)
(Note 1)
(Note 2)399071 re46.102 8 0 0 8 398.f2.524..6835 Tm0 Tc9 8 0 0T

Table 2. THERMAL CHARACTERISTICS

Characteristic		Symbol	Max	Unit
THERMAL CHARACTERISTICS (SOT−1123) (NSBA124XF3)				
Total Device Dissipation T_A = 25°C	 (Note 3) (Note 4)	P_D	 254 297	 mW
Derate above 25°C	(Note 3) (Note 4)		2.0 2.4	mW/°C
Thermal Resistance, Junction to Ambient	(Note 3) (Note 4)	$R_{\theta JA}$	493 421	°C/W
Thermal Resistance, Junction to Lead	(Note 3)	$R_{\theta JL}$	193	°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 x 1.0 Inch Pad.
3. FR−4 @ 100 mm^2, 1 oz. copper traces, still air.
4. FR−4 @ 500 mm^2, 1 oz. copper traces, still air.

Table 3. ELECTRICAL CHARACTERISTICS (T_A = 25°C, unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector−Base Cutoff Current (V_{CB} = 50 V, I_E = 0)	I_{CBO}	–	–	100	nAdc
Collector−Emitter Cutoff Current (V_{CE} = 50 V, I_B = 0)	I_{CEO}	–	–	500	nAdc
Emitter−Base Cutoff Current (V_{EB} = 6.0 V, I_C = 0)	I_{EBO}	–	–	0.13	mAdc
Collector−Base Breakdown Voltage (I_C = 10 μA, I_E = 0)	$V_{(BR)CBO}$	50	–	–	Vdc
Collector−Emitter Breakdown Voltage (Note 5) (I_C = 2.0 mA, I_B = 0)	$V_{(BR)CEO}$	50	–	–	Vdc
ON CHARACTERISTICS					
DC Current Gain (Note 5) (I_C = 5.0 mA, V_{CE} = 10 V)	h_{FE}	80	130	–	
Collector – Emitter Saturation Voltage (Note 5) (I_C = 10 mA, I_B = 1.0 mA)	$V_{CE(sat)}$	–	–	0.25	Vdc
Input Voltage (off) (V_{CE} = 5.0 V, I_C = 100 μA)	$V_{i(off)}$	–	0.9	0.5	Vdc
Input Voltage (on) (V_{CE} = 0.3 V, I_C = 2.0 mA)	$V_{i(on)}$	2.0	1.2	–	Vdc
Output Voltage (on) (V_{CC} = 5.0 V, V_B = 2.5 V, R_L = 1.0 kΩ)	V_{OL}	–	–	0.2	Vdc
Output Voltage (off) (V_{CC} = 5.0 V, V_B = 0.5 V, R_L = 1.0 kΩ)	V_{OH}	4.9	–	–	Vdc
Input Resistor	R1	15.4	22	28.6	kΩ
Resistor Ratio	R_1/R_2	0.38	0.47	0.56	

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

5. Pulsed Condition: Pulse Width = 300 msec, Duty Cycle ≤ 2%.

TYPICAL CHARACTERISTICS
MUN2134, MMUN2134L, MUN5134, DTA124XE, DTA124XM3

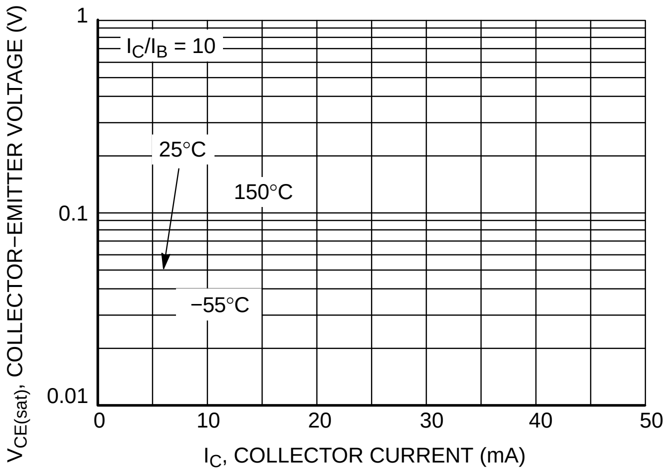


Figure 2. $V_{CE(sat)}$ vs. I_C

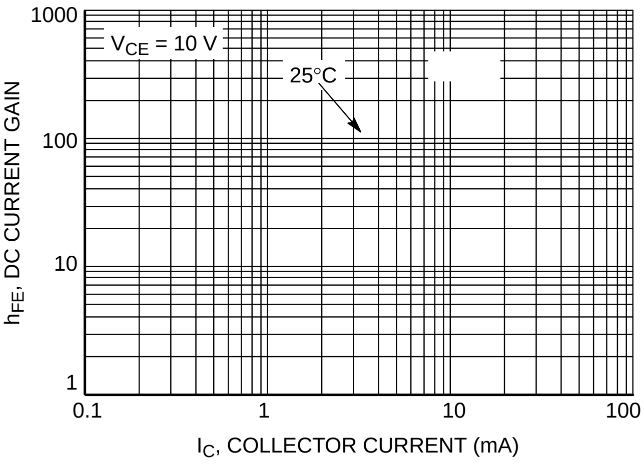


Figure 3. DC Current Gain

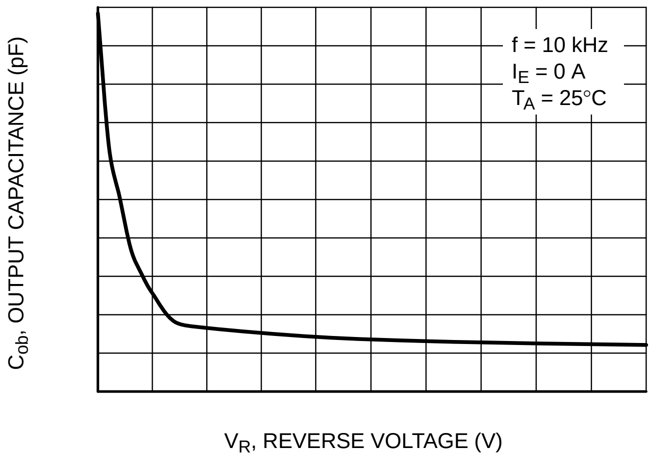


Figure 4. Output Capacitance

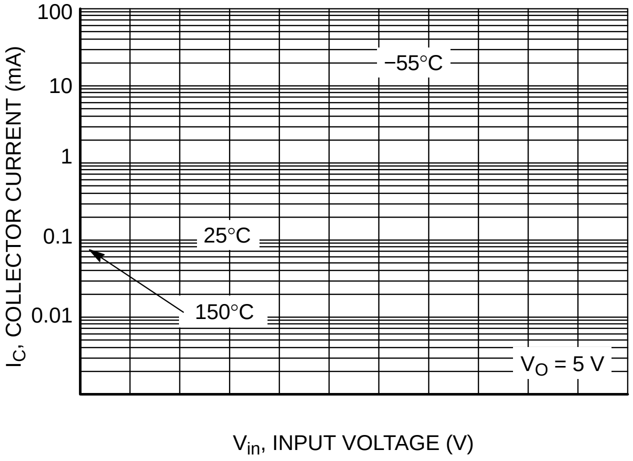


Figure 5. Output Current vs. Input Voltage

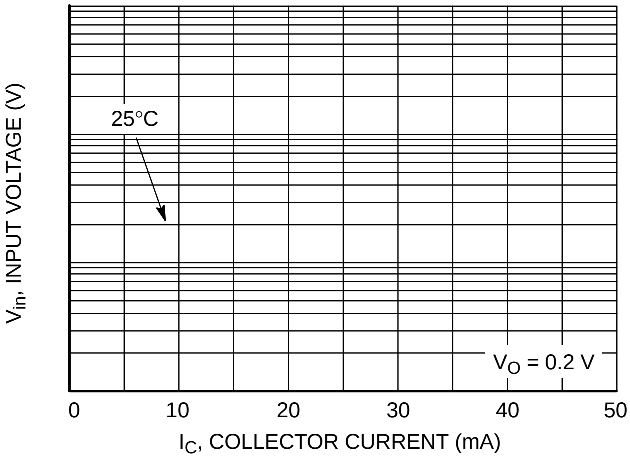
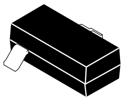


Figure 6. Input Voltage vs. Output Current



SCALE 4:1

SOT 23 (TO 236) 2.90x1.30x1.00 1.90P

CASE 318

ISSUE AU

DATE 14 AUG 2024

SOT 23 (TO 236) 2.90x1.30x1.00 1.90P
CASE 318
ISSUE AU

DATE 14 AUG 2024

STYLE 6:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

STYLE 7:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

STYLE 8:
PIN 1. ANODE
2. NO CONNECTION
3. CATHODE

STYLE 9:
PIN 1. ANODE
2. ANODE
3. CATHODE

STYLE 10:
PIN 1. DRAIN
2. SOURCE
3. GATE

STYLE 11:
PIN 1. ANODE
2. CATHODE
3. CATHODE−ANODE

STYLE 12:
PIN 1. CATHODE
2. CATHODE
3. ANODE

STYLE 13:
PIN 1. SOURCE
2. DRAIN
3. GATE

STYLE 14:
PIN 1. CATHODE
2. GATE
3. ANODE

STYLE 15:
PIN 1. GATE
2. CATHODE
3. ANODE

STYLE 16:
PIN 1. ANODE
2. CATHODE
3. CATHODE

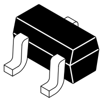
STYLE 17:
PIN 1. NO CONNECTION
2. ANODE
3. CATHODE

STYLE 18:
PIN 1. NO CONNECTION
2. CATHODE
3. ANODE

STYLE 19:
PIN 1. CATHODE
2. ANODE
3. CATHODE−ANODE

STYLE 22:
PIN 1. RETURN
2. OUTPUT
3. INPUT

STYLE 23:
PIN 1. ANODE
2. ANODE
3. CATHODE
3.

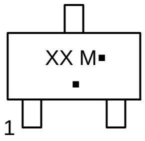


SCALE 4:1

SC−70 (SOT−323)
CASE 419
ISSUE R

DATE 11 OCT 2022

GENERIC MARKING DIAGRAM



XX = Specific Device Code
M = Date Code
▪ = Pb−Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb−

STYLE 1:
CANCELLED

STYLE 2:
PIN 1. ANODE
2. N.C.
3. CATHODE

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

STYLE 4:
PIN 1. CATHODE
2. CATHODE
3. ANODE

STYLE 5:
PIN 1. ANODE
2. ANODE
3. CATHODE

STYLE 6:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

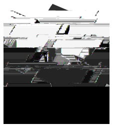
STYLE 7:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

STYLE 8:
PIN 1. GATE
2. SOURCE
3. DRAIN

STYLE 9:
PIN 1. ANODE
2. CATHODE
3. CATHODE-ANODE

STYLE 10:
PIN 1. CATHODE
2. ANODE
3. ANODE-CATHODE

STYLE 11:
PIN 1. CATHODE
2. CATHODE
3. CATHODE

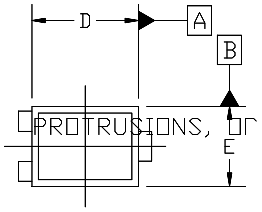


RECOMMEND

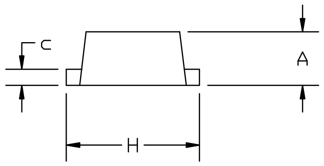
SOT−1123 0.80x0.60x0.37, 0.35P

CASE 524AA
ISSUE D

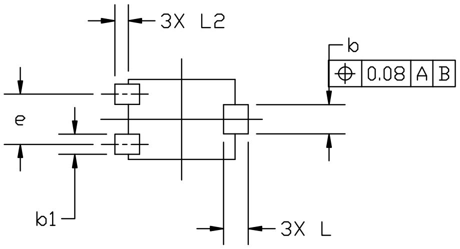
DATE 18 JAN 2024



TOP VIEW



SIDE VIEW



BOTTOM VIEW

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THI ASH, PROTRUSIONS, OR GATE BURRS.

MILLIMETERS			
DIM	MIN	NOM	MAX
A	0.34	0.37	0.40
b	0.15	0.22	0.2
			´5
e	0.35	0.38	0.40
H	0.950	1.000	1.050
L	0.185 REF		
L2	0.05	0.10	0.15

GENERIC MARKING DIAGRAM*

X = Specific Device Code
M = Date Code

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “▪”, may or may not be present. Some products may not follow the Generic Marking.

RECOMMENDED
MOUNTING FOOTPRINT
*

STYLE 1:	STYLE 2:	STYLE 3:	STYLE 4:	STYLE 5:
PIN 1. BASE	PIN 1. ANODE	PIN 1. ANODE	PIN 1. CATHODE	PIN 1. GATE
2. EMITTER	2. N/C	2. ANODE	2. CATHODE	2. SOURCE
3. COLLECTOR	3. CATHODE	3. CATHODE	3. ANODE	3. DRAIN

SOT−723 1.20x0.80x0.50, 0.40P

GENERIC MARKING