



D a T a (BRT)

R1 = 10 Ω, R2 = 10 Ω

PNP Transistors with Monolithic Bias Resistor Network

MUN2111, MMUN2111L, MUN5111, DTA114EE, DTA114EM3, NSBA114EF3

This series of digital transistors is designed to replace a single device and its external resistor bias network. The Bias Resistor Transistor (BRT) contains a single transistor with a monolithic bias network consisting of two resistors; a series base resistor and a base-emitter resistor. The BRT eliminates these individual components by integrating them into a single device. The use of a BRT can reduce both system cost and board space.

Features

- Simplifies Circuit Design
- Reduces Board Space
- Reduces Component Count
- S and NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS

Rating	Symbol	Max	Unit
-			
-			

MUN2111, MMUN2111L, MUN5111, DTA114EE, DTA114EM3, NSBA114EF3

Table 1. ORDERING INFORMATION


Device	Part Marking	Package	Shipping
		- -	
		- -	
		- -	
		- -	
		- -	

MUN2111, MMUN2111L, MUN5111, DTA114EE, DTA114EM3, NSBA114EF3


Table 2. THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
----------------	--------	-----	------


THERMAL CHARACTERISTICS (SC-59) (MUN2111)

			°C
	θ		°C
	θ		°C
		—	°C


THERMAL CHARACTERISTICS (SOT-23) (MMUN2111L)

			°C
	θ		°C
	θ		°C
		—	°C


THERMAL CHARACTERISTICS (SC-70/SOT-323) (MUN5111)

			°C
	θ		°C
	θ		°C
		—	°C

THERMAL CHARACTERISTICS (SC-75) (DTA114EE)

			°C
	θ		°C
		—	°C

THERMAL CHARACTERISTICS (SOT-723) (DTA114EM3)

			°C
	θ		°C
		—	°C

—
—
—
—

Table 2. THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
THERMAL CHARACTERISTICS (SOT-1123) (NSBA114EF3)			
			°C
	θ		°C
	θ		°C
		—	°C

—
—
—
—

Table 3. ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
—		—	—		
—		—	—		
—		—	—		
— μ			—	—	
—			—	—	

ON CHARACTERISTICS

				—	
—		—	—		
μ		—			
				—	
Ω		—	—		
Ω			—	—	
					Ω

<

MUN2111, MMUN2111L, MUN5111, DTA114EE, DTA114EM3, NSBA114EF3



TYPICAL CHARACTERISTICS – NSBA114EF3

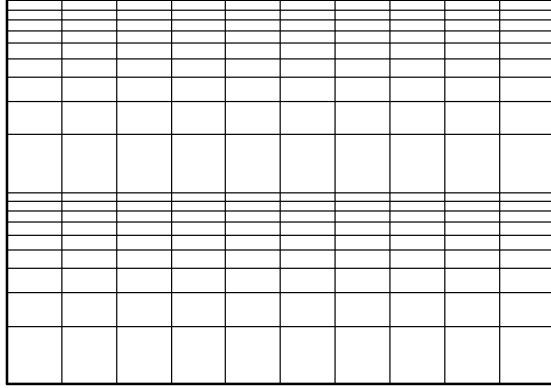


Figure 7. $V_{CE(sat)}$ vs. I_C

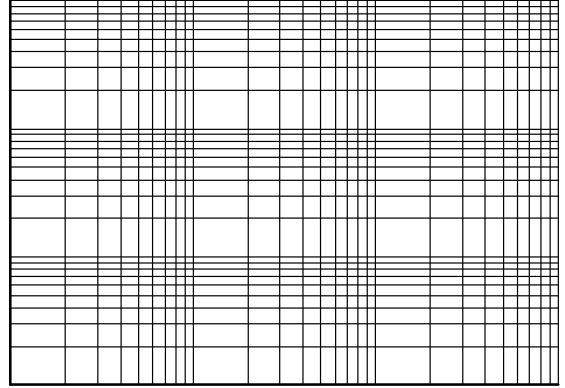


Figure 8. DC Current Gain

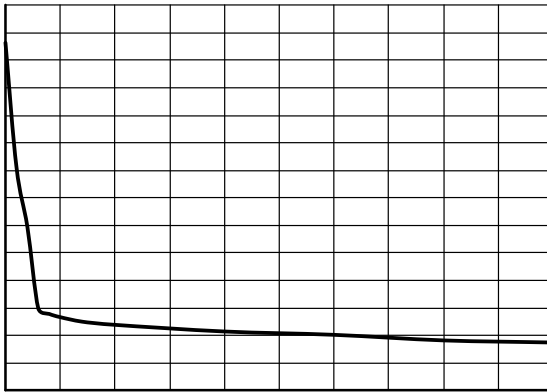


Figure 9. Output Capacitance

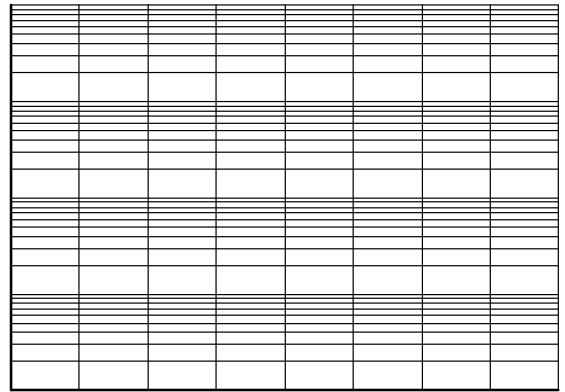
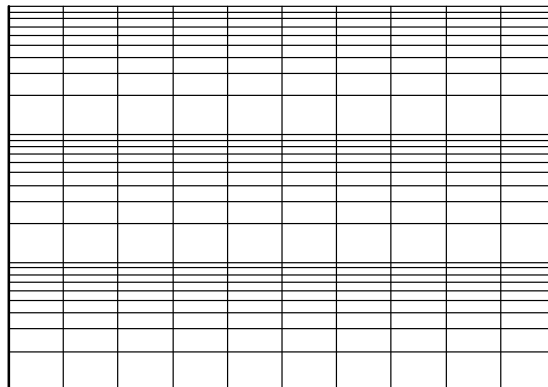


Figure 10. Output Current vs. Input Voltage



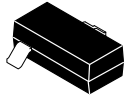
MUN2111, MMUN2111L, MUN5111, DTA114EE, DTA114EM3, NSBA114EF3

PACKAGE DIMENSIONS

SC-59-3 2.90x1.50x1.15, 1.90P

RECOMMENDED MOUNTING FOOTPRINT*

* FOR ADDITIONAL INFORMATION ON OUR Pb-FREE STRATEGY
AND SOLDERING DETAILS, PLEASE DOWNLOAD



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

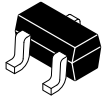
STYLE 17:
PIN 1. NO CONNECTION
2. ANODE
3. CATHODE

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.

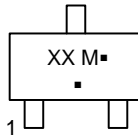


SCALE 4:1

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

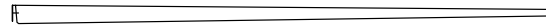
STYLE 10:
PIN 1. CATHODE
2. ANODE
3. ANODE-CATHODE

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



-

RECOMMEND



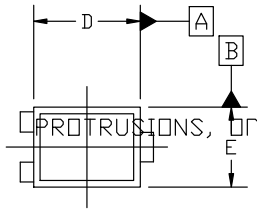


SOT-1123 0.80x0.60x0.37, 0.35P
CASE 524AA
ISSUE D

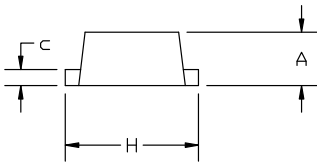
DATE 18 JAN 2024

NOTES:

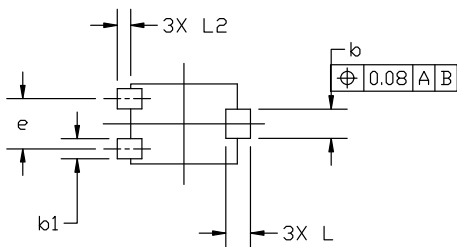
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS, ASH,



TOP VIEW



SIDE VIEW

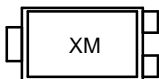


BOTTOM VIEW

← 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

RECOMMENDED MOUNTING FOOTPRINT

*

*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.

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

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

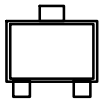
STYLE 3:
 PIN 1. ANODE
 2. ANODE
 3. CATHODE

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

STYLE 5:
 PIN 1. GATE
 2. SOURCE
 3. DRAIN

SOT-723 1.20x0.80x0.50, 0.40P

GENERIC
MARKING



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