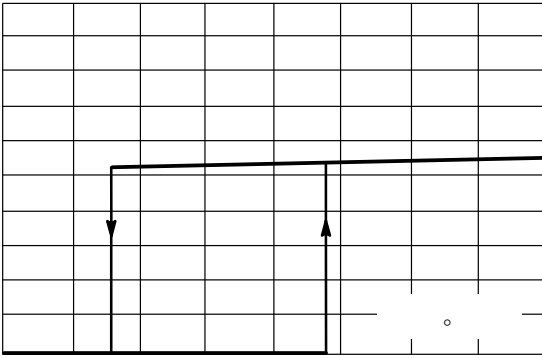


MC34164, MC33164, NCV33164

MAXIMUM RATINGS

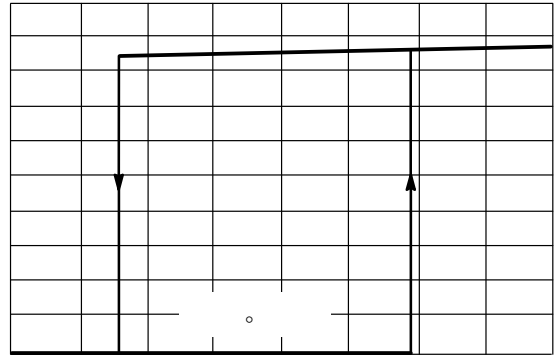
Rating	Symbol	Value	Unit
Power Input Supply Voltage	V_{in}	-1.0 to 12	V
Reset Output Voltage	V_O	-1.0 to 12	V
Reset Output Sink Current	I_{Sink}	Internally Limited	mA
Clamp Diode Forward Current, Reset to Input Pin (Note 1)	IF	100	mA
Power Dissipation and Thermal Characteristics			
P Suffix, Plastic Package			
Maximum Power Dissipation @ $T_A = 25^\circ\text{C}$	P_D	700	mW
Thermal Resistance, Junction-to-Air	$R_{\theta JA}$	178	$^\circ\text{C/W}$
D Suffix, Plastic Package			
Maximum Power Dissipation @ $T_A = 25^\circ\text{C}$	P_D	700	mW
Thermal Resistance, Junction-to-Air	$R_{\theta JA}$	178	$^\circ\text{C/W}$
DM Suffix, Plastic Package			
Maximum Power Dissipation @ $T_A = 25^\circ\text{C}$	P_D	520	mW
Thermal Resistance, Junction-to-Air	$R_{\theta JA}$	240	$^\circ\text{C/W}$
Operating Junction Temperature	T_J	+150	$^\circ\text{C}$

Operating Ambient Temperature Range
240



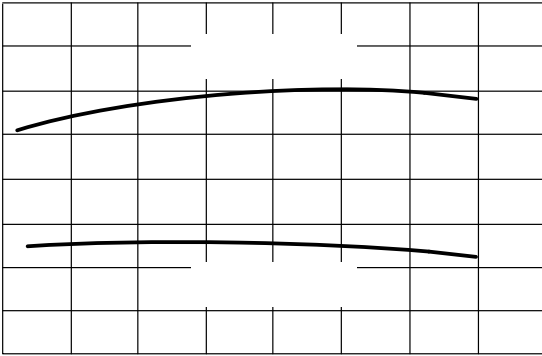
V_{in} , INPUT VOLTAGE (V)

Figure 4. MC3X164-3 $\overline{\text{Reset}}$ Output Voltage versus Input Voltage



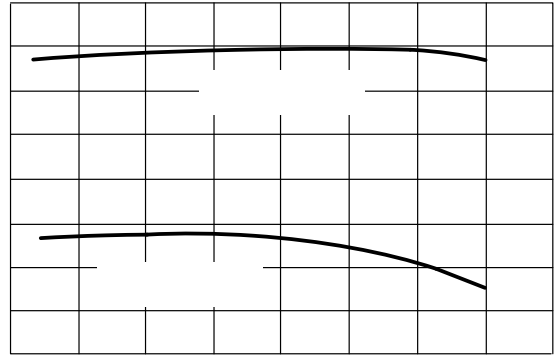
V_{in} , INPUT VOLTAGE (V)

Figure 5. MC3X164-5 $\overline{\text{Reset}}$ Output Voltage versus Input Voltage



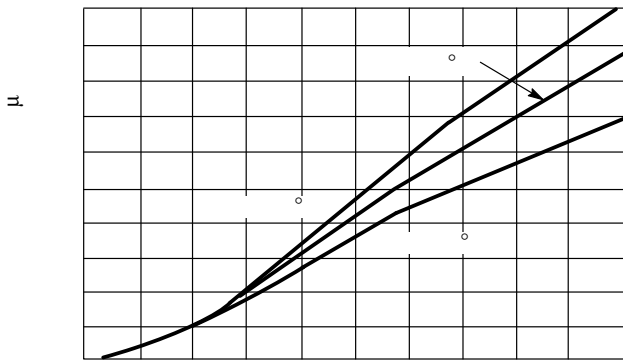
T_A , AMBIENT TEMPERATURE ($^{\circ}\text{C}$)

Figure 6. MC3X164-3 Comparator Threshold Voltage versus Temperature



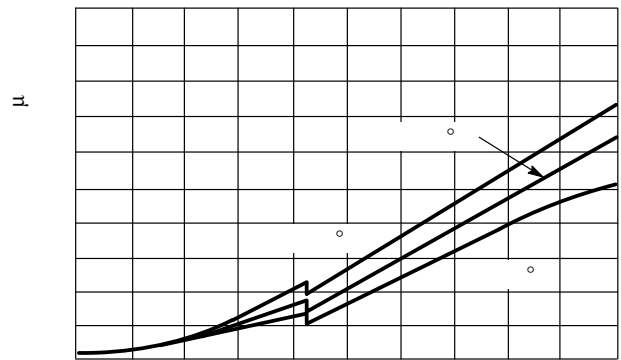
T_A , AMBIENT TEMPERATURE ($^{\circ}\text{C}$)

Figure 7. MC3X164-5 Comparator Threshold Voltage versus Temperature



V_{in} , INPUT VOLTAGE (V)

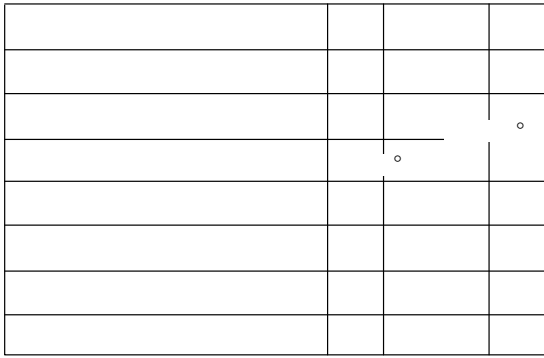
Figure 8. MC3X164-3 Input Current versus Input Voltage



V_{in} , INPUT VOLTAGE (V)

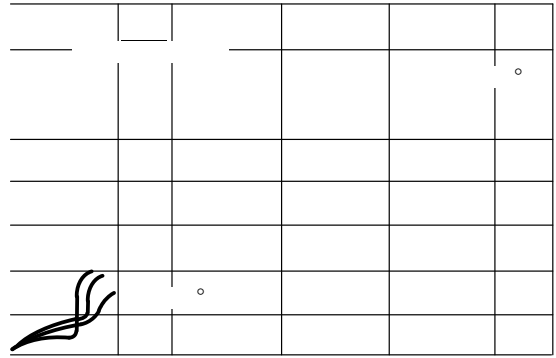
Figure 9. MC3X164-5 Input Current versus Input Voltage

MC34164, MC33164, NCV33164



m

Figure 10. MC3X164-3 $\overline{\text{Reset}}$ Output Saturation versus Sink Current



m

Figure 11. MC3X164-5 $\overline{\text{Reset}}$ Output Saturation versus Sink Current

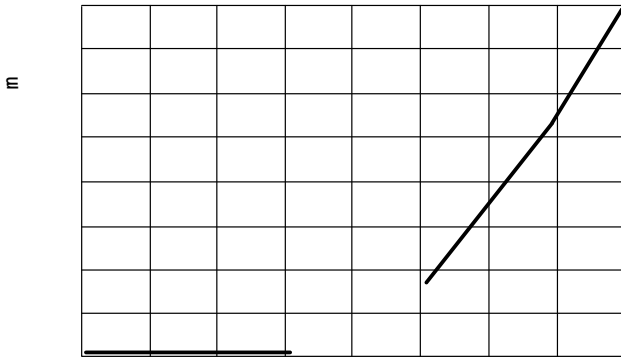


Figure 12. Clamp Diode Forward Current versus Voltage

Figure 13. $\overline{\text{Reset}}$ Delay Time (MC3X164-5 Shown)

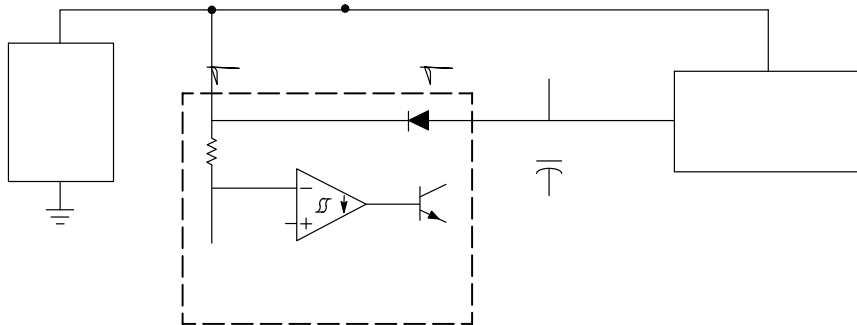
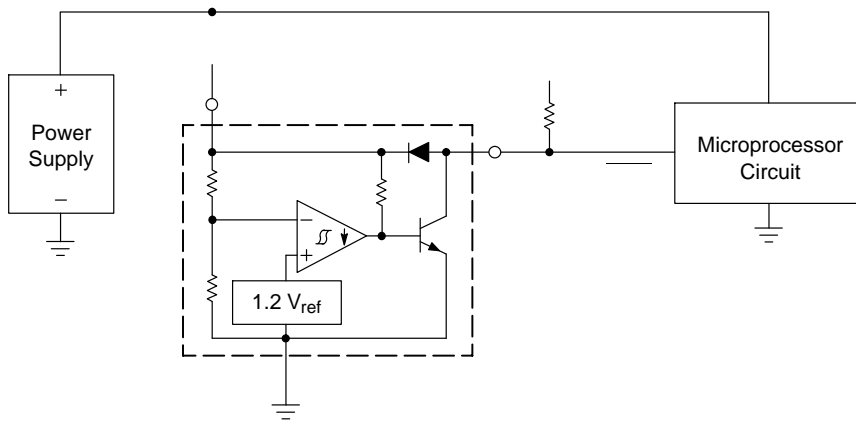


Figure 14. Low Voltage Microprocessor Reset

MC34164, MC33164, NCV33164



m

Figure 15. Low Voltage Microprocessor Reset With Additional Hysteresis (MC3X164-5 Shown)

←

MC34164, MC33164, NCV33164

ORDERING INFORMATION

Device	Package	Shipping†
MC33164D-3G	SOIC-8 (Pb-Free)	98 Units / Rail
MC33164D-3R2G	SOIC-8 (Pb-Free)	2500 Units / Tape & Reel
NCV33164D-3R2G*	SOIC-8 (Pb-Free)	
MC33164DM-3R2G	Micro8 (Pb-Free)	4000 Units / Tape & Reel
MC33164P-3G	TO-92 (Pb-Free)	2000 Units / Box
MC33164P-3RAG	TO-92 (Pb-Free)	2000 Units / Tape & Reel
MC33164P-3RPG	TO-92 (Pb-Free)	2000 Units / Pack
MC33164D-5G	SOIC-8 (Pb-Free)	98 Units / Rail
MC33164D-5R2G	SOIC-8 (Pb-Free)	2500 Units / Tape & Reel
NCV33164D-5R2G*	SOIC-8 (Pb-Free)	
MC33164DM-5R2G		

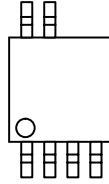
6/1/20 Qcu

MC34164, MC33164, NCV33164

PIN CONNECTIONS AND MARKING DIAGRAMS

SOIC-8
D SUFFIX
CASE 751

Micro8
MC33164DM
CASE 846A

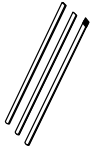


- SRC = Device Code
- x = Device Number 3 or 4
- y = Suffix Number 3 or 5
- A = Assembly Location
- L = Wafer Lot
- Y = Year
- W = Work Week
- = Pb-Free



TO-92 (TO-226) 1 WATT

SCALE 1:1

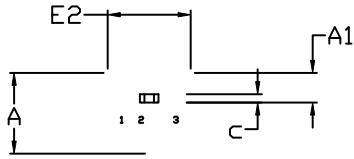


STRAIGHT LEAD



BENT LEAD

STRAIGHT LEAD



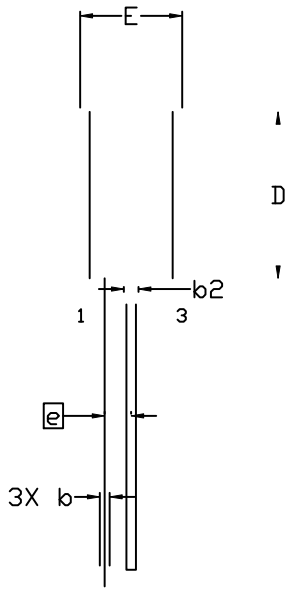
END VIEW

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2009.
2. CONTROLLING DIMENSION: MILLIMETERS
3. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH OR GATE PROTRUSIONS. T EXCEED 0.20. DIMENSION b2 LOCATED ABOVE THE DAMBAR

PORTION OF MIDDLE LEAD.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	3.75	3.90	4.05
A1	1.28	1.43	1.58
b	0.38	0.465	0.55
b2	0.62	0.70	0.78
c	0.37		
D			
E			
E2			
e	1.27 BSC		



STYLES AND MARKING ON PAGE 3

	TO-92 (TO-226) 1 WATT	PAGE 1 OF 3

TO-92 (TO-

TO-92 (TO-226) 1 WATT

—

STYLE 1:

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

STYLE 6:

- PIN 1. GATE
- 2. SOURCE & SUBSTRATE
- 3. DRAIN

STYLE 11:

- PIN 1. ANODE
- 2. CATHODE & ANODE
- 3. CATHODE

STYLE 16:

- PIN 1. ANODE
- 2. GATE
- 3. CATHODE

STYLE 21:

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

STYLE 26:

- PIN 1. V_{CC}
- 2. GROUND 2
- 3. OUTPUT

STYLE 31:

- PIN 1. GATE
- 2. DRAIN
- 3. SOURCE

STYLE 2:

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

STYLE 7:

- PIN 1. SOURCE
- 2. DRAIN
- 3. GATE

STYLE 12:

- PIN 1. MAIN TERMINAL 1
- 2. GATE
- 3. MAIN TERMINAL 2

STYLE 17:

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

STYLE 22:

- PIN 1. SOURCE
- 2. GATE
- 3. DRAIN

STYLE 27:

- PIN 1. MT
- 2. SUBSTRATE
- 3. MT

STYLE 32:

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

STYLE 3:

- PIN 1. ANODE
- 2. ANODE
- 3. CATHODE

STYLE 8:

- PIN 1. DRAIN
- 2. GATE
- 3. SOURCE & SUBSTRATE

STYLE 13:

- PIN 1. ANODE 1
- 2. GATE
- 3. CATHODE 2

STYLE 18:

- PIN 1. ANODE
- 2. CATHODE

-X-

- - - -

⊕ 0. (0.010) ○ ○

-Y-

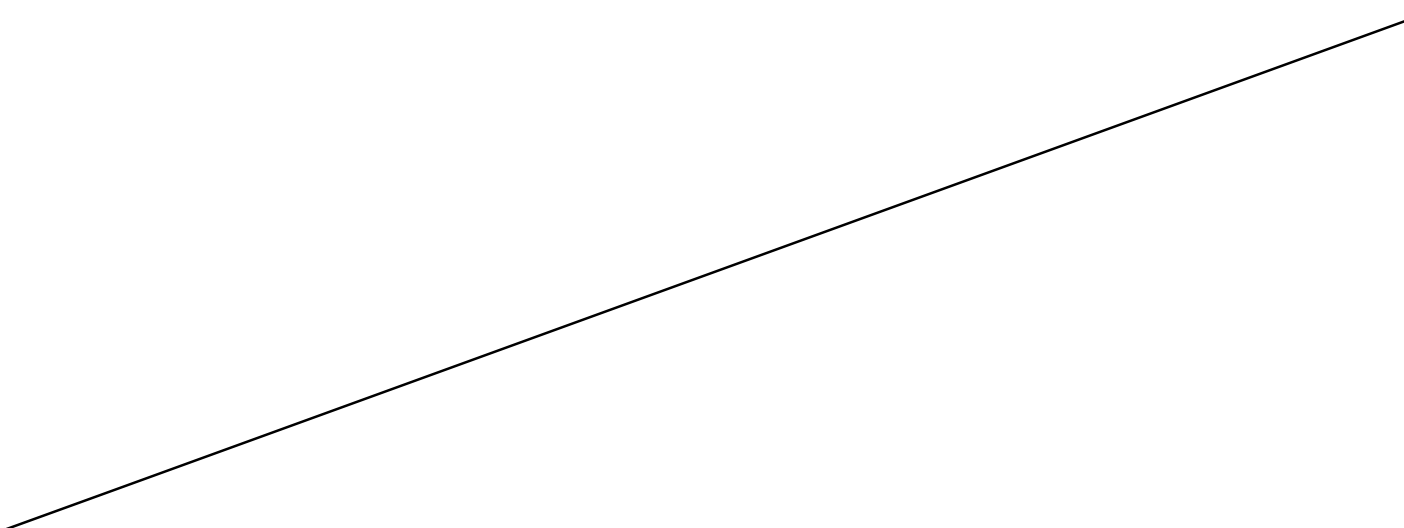
- - - -

G

-Z-

C	1.35	1.75	0.053	0.069
D	0.33	0.51	0.013	0.020
G	1.27 BSC		0.050 BSC	
H	0.10	0.25	0.004	0.010
J	0.19	0.25	0.007	0.010
K	0.40	1.27	0.016	0.050
M	0	8	0	8
N	0.25	0.50	0.010	0.020
S	5.80	6.20	0.228	0.244

0. (0.010) ○ 1011001.000 0.1 1011. 100 0001.1 1001 1 0()01.1 100111.1.10000 5.80 6.20 0.228 0.244 1.0 0 1000 0.)





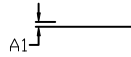
SCALE 2:1

Micro8
CASE 846A-02
ISSUE K

DATE 16 JUL 2020

NOTES:

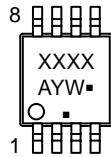
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2009.
2. CONTROLLING DIMENSION: MILLIMETERS
3. DIMENSION b DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE PROTRUSION SHALL BE 0.10 mm IN EXCESS OF



DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSION

$\Delta |0.038 \text{ (} 0.0015 \text{)}|$

GENERIC MARKING DIAGRAM*



- XXXX = Specific Device Code
- A = Assembly Location
- Y = Year
- W = Work Week
- = Pb-Free Package

(Note: Microdot may be in either location)

*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

DIM	MILLIMETER		
	MIN.	NOM.	
A	---	---	
A1	0.05	0.08	
c	0.13	0.18	
E			

- STYLE 1:
- PIN 1. SOURCE
 - 2. SOURCE
 - 3. SOURCE
 - 4. GATE
 - 5. DRAIN
 - 6. DRAIN
 - 7. DRAIN
 - 8. DRAIN

- STYLE 2:
- PIN 1. SOURCE 1
 - 2. GATE 1
 - 3. SOURCE 2
 - 4. GATE 2
 - 5. DRAIN 2
 - 6. DRAIN 2
 - 7. DRAIN 1
 - 8. DRAIN 1

- STYLE 3:
- PIN 1. N-SOURCE
 - 2. N-GATE
 - 3. P-SOURCE
 - 4. P-GATE
 - 5. P-DRAIN
 - 6. P-DRAIN
 - 7. N-DRAIN
 - 8. N-DRAIN

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