MICROCHIP

MIC5318

High Performance 300 mA μCap Ultra-Low Dropout Regulator

Features

- Ultra-Low Dropout Voltage 110 mV @ 300 mA
- Input Voltage Range: 2.3V to 6.0V
- 300 mA Guaranteed Output Current
- Stable with Ceramic Output Capacitors
- Ultra-Low Output Noise: 30 μV_{RMS}
- Low Quiescent Current: 85 μA Total
- High PSRR > 70 dB @ 1 kHz
- Less than 35 μs Turn-On Time
- High Output Accuracy
  - ±2% Initial Accuracy
  - ±3% over Temperature
- Thermal Shutdown and Current-Limit Protection
- Tiny 6-lead 1.6 mm x 1.6 mm UDFN package
- Thin SOT23-5 Package

Applications

- Mobile Phones
- PDAs
- GPS Receivers
- Portable Electronics
- Digital Still and Video Cameras

General Description

The MIC5318 is a high performance, single output ultra-low dropout regulator, offering low total output noise in an ultra-small UDFN package. The MIC5318 is capable of sourcing 300 mA output current and offers high PSRR and low output noise, making it an ideal solution for RF applications.

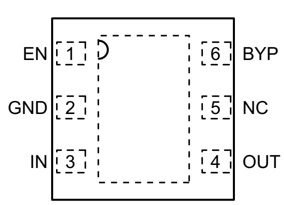
Ideal for battery operated applications, the MIC5318 offers 2% initial accuracy, extremely low dropout voltage (110 mV @ 300 mA), and low ground current (typically 85 μA total). The MIC5318 can also be put into a "zero" off-mode current state, drawing no current when disabled.

The MIC5318 is available in the 1.6 mm x 1.6 mm UDFN package, occupying only 2.56 mm^2 of PCB area, fully a 36% reduction in board area when compared to SC-70 and 2 mm x 2 mm UDFN packages.

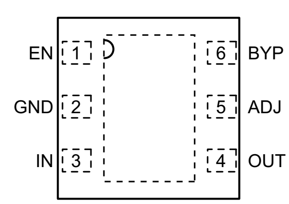
The MIC5318 has an operating junction temperature range of –40°C to +125°C and is available in fixed and adjustable output voltages in lead-free (RoHS compliant) UDFN and Thin SOT23-5 packages.

Package Types

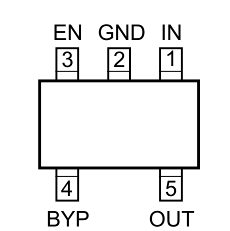
MIC5318 (FIXED)
6-Lead UDFN (MT)
(Top View)



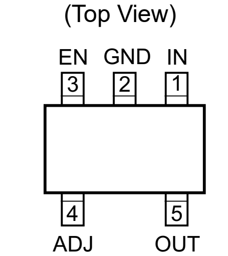
MIC5318 (ADJ.)
6-Lead UDFN (MT)
(Top View)



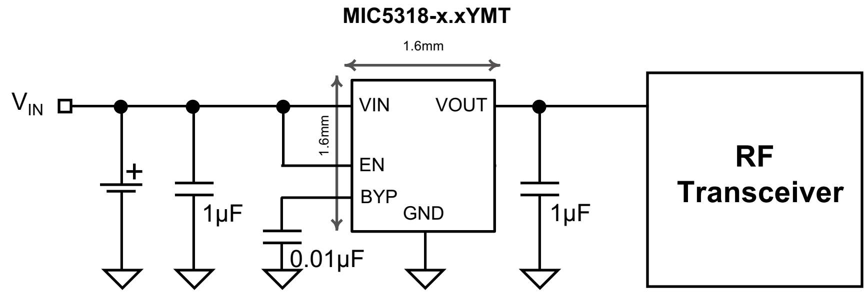
MIC5318 (FIXED)
5-Lead TSOT23 (D5)
(Top View)



MIC5318 (ADJ.)
5-Lead TSOT23 (D5)
(Top View)

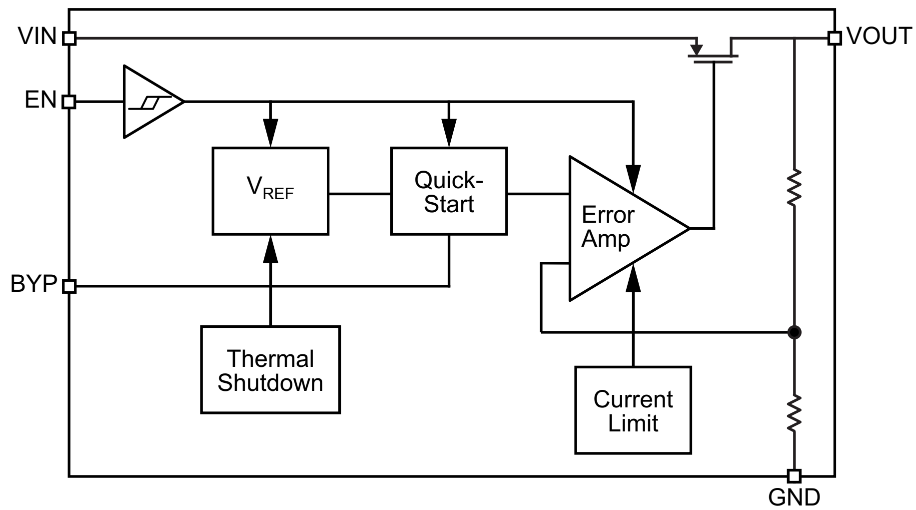


Typical Application Circuit

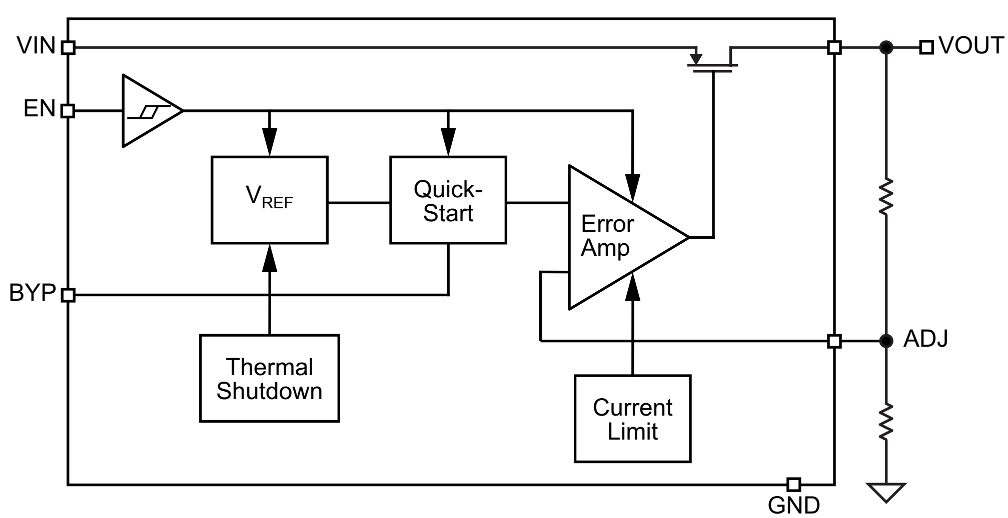


Functional Block Diagrams

Fixed Version



Adjustable Version



1.0 ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings †

Supply Voltage (V_{IN}) .... 0V to +6.5V
Enable Input Voltage (V_{EN}) .... 0V to +6.5V
Power Dissipation (Note 1) .... Internally Limited
ESD Rating .... Note 2

Operating Ratings ‡

Supply Voltage (V_{IN}) .... +2.3V to +6.0V
Enable Input Voltage (V_{EN}) .... 0V to V_{IN}

† Notice: Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at those or any other conditions above those indicated in the operational sections of this specification is not intended. Exposure to maximum rating conditions for extended periods may affect device reliability.
‡ Notice: The device is not guaranteed to function outside its operating rating.

Note 1: The maximum allowable power dissipation of any T_A (ambient temperature) is $P_{D(MAX)} = (T_{J(MAX)} – T_A)/\theta_{JA}$. Exceeding the maximum allowable power dissipation will result in excessive die temperature, and the regulator will go into thermal shutdown.

2: Devices are ESD sensitive. Handling precautions are recommended. Human body model.

ELECTRICAL CHARACTERISTICS

Electrical Characteristics: $V_{IN} = V_{OUT} + 1.0V$; $C_{OUT} = 1.0 µF$; $I_{OUT} = 100 µA$; $T_J = +25°C$, **bold** values valid for –40°C to +125°C, unless noted. (Note 1)

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Output Voltage Accuracy	V_{OUT}	–2.0	—	2.0	%	Variation from nominal V_{OUT}
		–3.0	—	**3.0**		Variation from nominal V_{OUT}; –40°C to +125°C
Line Regulation	$\Delta V_{OUT}/(V_{OUT} \times \Delta V_{IN})$	—	0.02	**0.6**	%/V	$V_{IN} = V_{OUT} + 1V$ to 6.0V; $I_{OUT} = 100 µA$
Load Regulation (Note 2)	$\Delta V_{OUT}/V_{OUT}$	—	0.2	**2.0**	%	$I_{OUT} = 100 µA$ to 300 mA
Dropout Voltage (Note 3)	V_{DO}	—	17	—	mV	$I_{OUT} = 50 mA$; $V_{OUT} \geq 2.8V$
		—	50	**100**		$I_{OUT} = 150 mA$; $V_{OUT} \geq 2.8V$
		—	110	**200**		$I_{OUT} = 300 mA$; $V_{OUT} \geq 2.8V$
Ground Pin Current (Note 4)	I_{GND}	—	85	**150**	µA	$I_{OUT} = 0 mA$ to 300 mA
Ground Pin Current in Shutdown	I_{SHDN}	—	0.01	1	µA	$V_{EN} \leq 0.2V$

Note 1: Specification for packaged product only.

2: Regulation is measured at constant junction temperature using low duty cycle pulse testing, changes in output voltage due to heating effects are covered by the thermal regulation specification.

3: Dropout voltage is defined as the input-to-output differential at which the output voltage drops 2% below its nominal value measured at 1V differential. For outputs below 2.3V, dropout voltage is the input-to-output differential with the minimum input voltage 2.3V.

4: Ground pin current is the regulation quiescent current. The total current drawn from the supply is the sum of the load current plus the ground pin current.

ELECTRICAL CHARACTERISTICS (CONTINUED)

Electrical Characteristics: $V_{IN} = V_{OUT} + 1.0V$; $C_{OUT} = 1.0\ \mu F$; $I_{OUT} = 100\ \mu A$; $T_J = +25°C$, **bold** values valid for –40°C to +125°C, unless noted. (Note 1)

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Ripple Rejection	PSRR	—	75	—	dB	f = Up to 1 kHz; $C_{OUT} = 1.0\ \mu F$; $C_{BYP} = 0.1\ \mu F$
		—	55	—		f = 1 kHz to 20 kHz; $C_{OUT} = 1.0\ \mu F$; $C_{BYP} = 0.1\ \mu F$
Current Limit	I_{LIM}	**340**	500	**900**	mA	$V_{OUT} = 0V$
Output Voltage Noise	e_N	—	30	—	μV_{RMS}	$C_{OUT} = 1.0\ \mu F$; $C_{BYP} = 0.1\ \mu F$; 10 Hz to 100 kHz
Enable Input						
Enable Input Voltage	V_{EN}	—	—	**0.2**	V	Logic Low
		1.1	—	—		Logic High
Enable Input Current	I_{EN}	—	0.01	1	µA	$V_{IL} \le 0.2V$
		—	0.01	1		$V_{IH} \ge 1.0V$
Turn-On Time						
Turn-On Time	t_{ON}	—	30	**100**	µs	$C_{OUT} = 1.0\ \mu F$; $C_{BYP} = 0.1\ \mu F$; $I_{OUT} = 150$ mA

Note 1: Specification for packaged product only.

2: Regulation is measured at constant junction temperature using low duty cycle pulse testing, changes in output voltage due to heating effects are covered by the thermal regulation specification.

3: Dropout voltage is defined as the input-to-output differential at which the output voltage drops 2% below its nominal value measured at 1V differential. For outputs below 2.3V, dropout voltage is the input-to-output differential with the minimum input voltage 2.3V.

4: Ground pin current is the regulation quiescent current. The total current drawn from the supply is the sum of the load current plus the ground pin current.

TEMPERATURE SPECIFICATIONS

Parameters	Sym.	Min.	Typ.	Max.	Units	Conditions
Temperature Ranges						
Maximum Junction Temperature Range	$T_{J(MAX)}$	–40	—	+125	°C	—
Operating Temperature Range	T_J	–40	—	+125	°C	—
Storage Temperature Range	T_S	–65	—	+150	°C	—
Lead Temperature	—	—	—	+260	°C	Soldering, 3 sec.
Package Thermal Resistance						
Thermal Resistance, UDFN 6-Lead	θ_{JA}	—	100	—	°C/W	—
Thermal Resistance, TSOT23-5	θ_{JA}	—	235	—	°C/W	—

Note 1: The maximum allowable power dissipation is a function of ambient temperature, the maximum allowable junction temperature and the thermal resistance from junction to air (i.e., T_A, T_J, θ_{JA}). Exceeding the maximum allowable power dissipation will cause the device operating junction temperature to exceed the maximum rating. Sustained junction temperatures above that maximum can impact device reliability.

2.0 TYPICAL OPERATING CHARACTERISTICS

Note: The graphs and tables provided following this note are a statistical summary based on a limited number of samples and are provided for informational purposes only. The performance characteristics listed herein are not tested or guaranteed. In some graphs or tables, the data presented may be outside the specified operating range (e.g., outside specified power supply range) and therefore outside the warranted range.

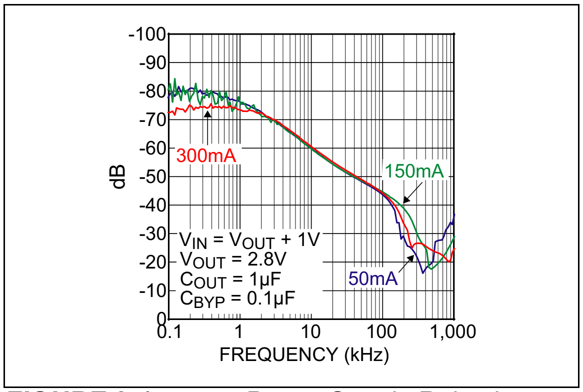


FIGURE 2-1: *Power Supply Rejection Ratio.*

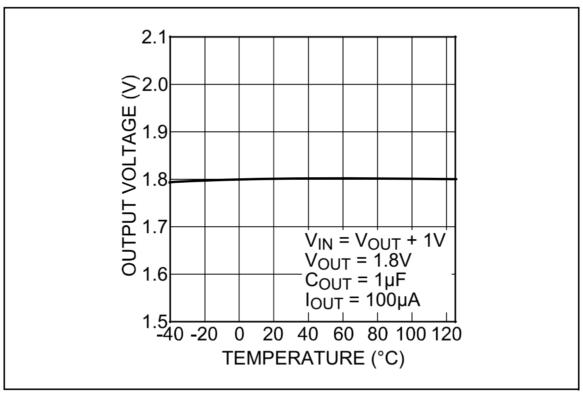


FIGURE 2-2: *Output Voltage vs. Temperature.*

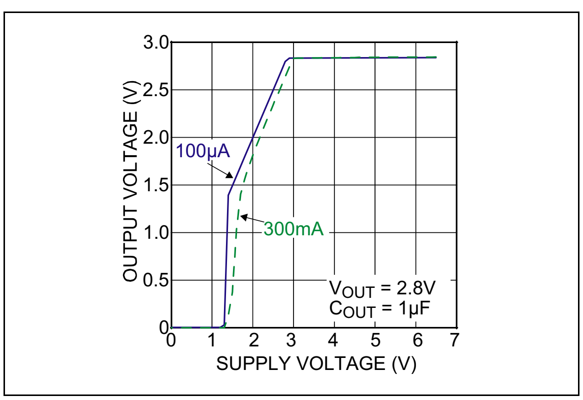


FIGURE 2-3: *Output Voltage vs. Supply Voltage.*

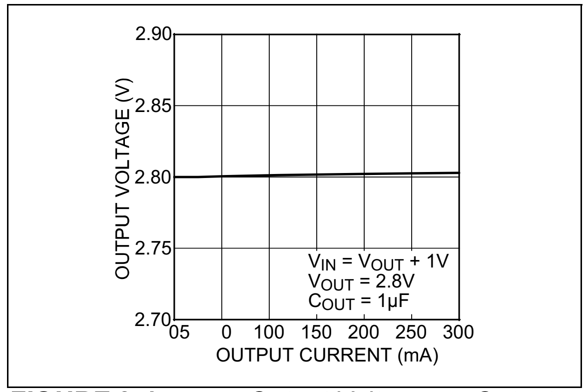


FIGURE 2-4: *Output Voltage vs. Output Current.*

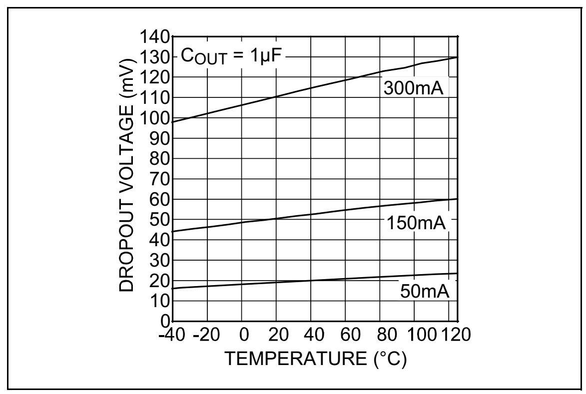


FIGURE 2-5: *Dropout Voltage vs. Temperature.*

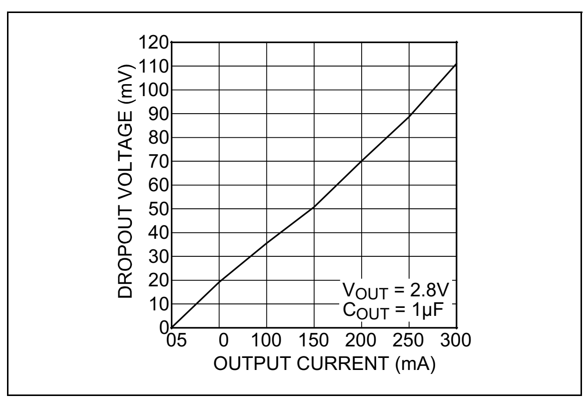


FIGURE 2-6: *Dropout Voltage vs. Output Current.*

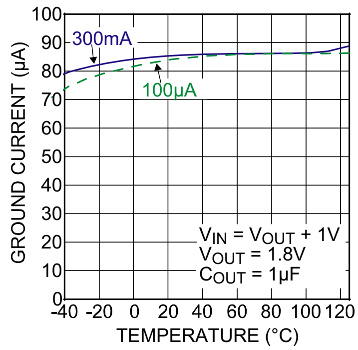


FIGURE 2-7: *Ground Pin Current vs. Temperature.*

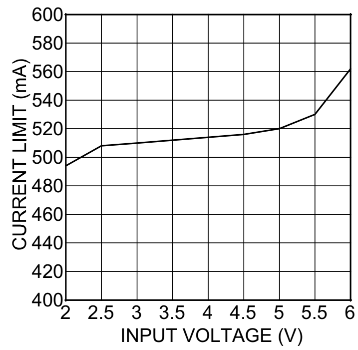


FIGURE 2-10: *Current Limit vs. Input Voltage.*

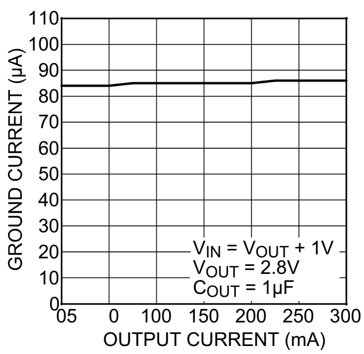


FIGURE 2-8: *Ground Pin Current vs. Output Current.*

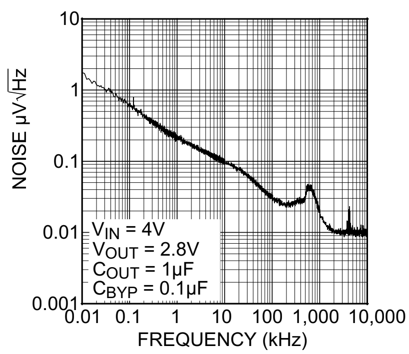


FIGURE 2-11: *Output Noise Spectral Density.*

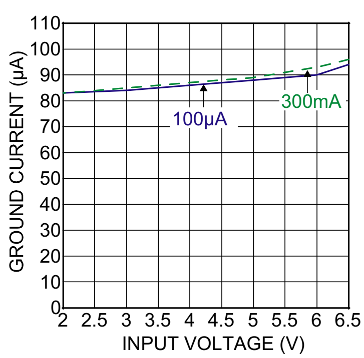


FIGURE 2-9: *Ground Pin Current vs. Input Voltage.*

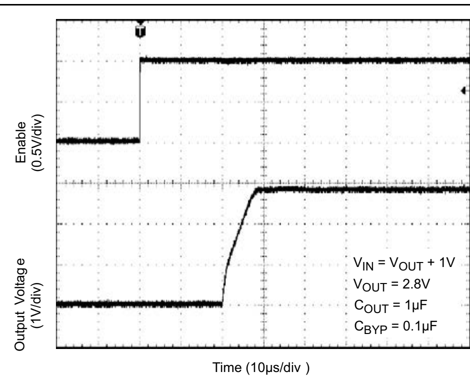


FIGURE 2-12: *Enable Turn-On.*

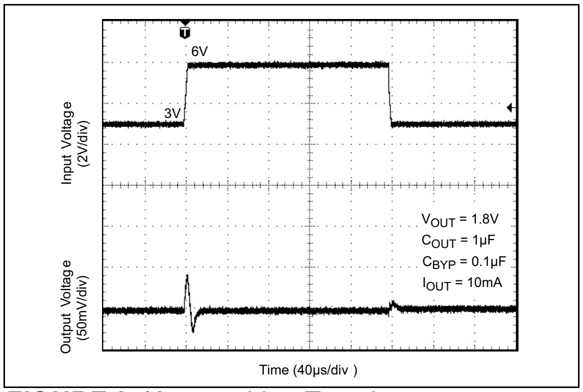


FIGURE 2-13: *Line Transient.*

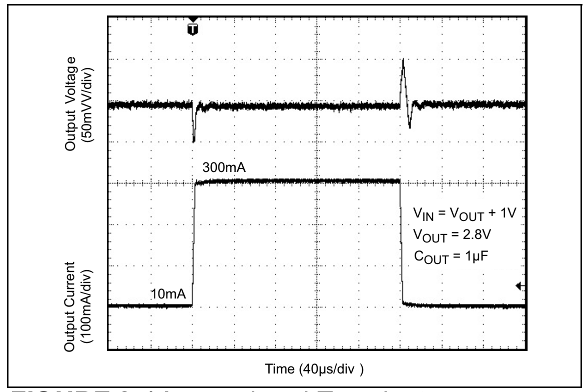


FIGURE 2-14: *Load Transient.*

3.0 PIN DESCRIPTIONS

The descriptions of the pins are listed in Table 3-1.

TABLE 3-1: PIN FUNCTION TABLE

Pin Number UDFN-6 (Fixed)	Pin Number UDFN-6 (Adj.)	Pin Number TSOT23-5 (Fixed)	Pin Number TSOT23-5 (Adj).	Pin Name	Description
1	1	3	3	EN	Enable Input. Active-High. High = on, low = off. Do not leave floating.
2	2	2	2	GND	Ground
3	3	1	1	IN	Supply Input.
4	4	5	5	OUT	Output Voltage.
5	—	—	—	NC	No connection.
—	5	—	4	ADJ	Adjust Input. Connect to external resistor voltage divider network.
6	6	4	—	BYP	Reference Bypass: Connect external 0.01 µF to GND for reduced Output Noise. May be left open.
ePad	ePad	—	—	EP	Exposed Heat Sink Pad: connected to ground internally.

4.0 APPLICATION INFORMATION

4.1 Enable/Shutdown

The MIC5318 comes with an active-high enable pin that allows the regulator to be disabled. Forcing the enable pin low disables the regulator and sends it into a “zero” off-mode current state. In this state, current consumed by the regulator goes nearly to zero. Forcing the enable pin high enables the output voltage. The active-high enable pin uses CMOS technology and the enable pin cannot be left floating; a floating enable pin may cause an indeterminate state on the output.

4.2 Input Capacitor

The MIC5318 is a high-performance, high bandwidth device. Therefore, it requires a well-bypassed input supply for optimal performance. A 1 µF capacitor is required from the input to ground to provide stability. Low-ESR ceramic capacitors provide optimal performance at a minimum of space. Additional high-frequency capacitors, such as small-valued NPO dielectric-type capacitors, help filter out high-frequency noise and are good practice in any RF-based circuit.

4.3 Output Capacitor

The MIC5318 requires an output capacitor of 1 µF or greater to maintain stability. The design is optimized for use with low-ESR ceramic chip capacitors. High ESR capacitors may cause high frequency oscillation. The output capacitor can be increased, but performance has been optimized for a 1 µF ceramic output capacitor and does not improve significantly with larger capacitance.

X7R/X5R dielectric-type ceramic capacitors are recommended because of their temperature performance. X7R-type capacitors change capacitance by 15% over their operating temperature range and are the most stable type of ceramic capacitors. Z5U and Y5V dielectric capacitors change value by as much as 50% and 60%, respectively, over their operating temperature ranges. To use a ceramic chip capacitor with Y5V dielectric, the value must be much higher than an X7R ceramic capacitor to ensure the same minimum capacitance over the equivalent operating temperature range.

4.4 Bypass Capacitor

A capacitor can be placed from the noise bypass pin to ground to reduce output voltage noise. The capacitor bypasses the internal reference. A 0.1 µF capacitor is recommended for applications that require low-noise outputs. The bypass capacitor can be increased, further reducing noise and improving PSRR. Turn-on time increases slightly with respect to bypass capacitance. A unique, quick-start circuit allows the MIC5318 to drive a large capacitor on the bypass pin without significantly slowing turn-on time. Refer to the Typical Operating Characteristics for performance with different bypass capacitors.

4.5 No-Load Stability

Unlike many other voltage regulators, the MIC5318 will remain stable and in regulation with no load. This is especially crucial for CMOS RAM keep-alive applications.

4.6 Adjustable Regulator Application

Adjustable regulators use the ratio of two resistors to multiply the reference voltage to produce the desired output voltage. The MIC5318 can be adjusted from 1.25V to 5.5V by using two external resistors (Figure 4-1). The resistors set the output voltage based on the following equation:

EQUATION 4-1:

$$V_{OUT} = V_{REF} \times \left(1 + \frac{R1}{R2}\right)$$

Where:

V_{REF} = 1.25V

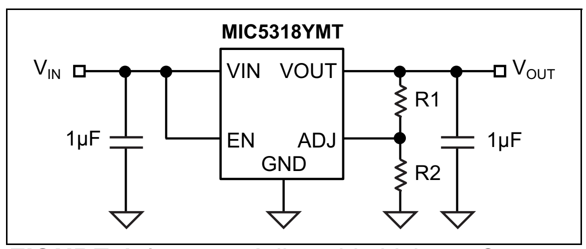


FIGURE 4-1: *Adjustable Voltage Output.*

4.7 Thermal Considerations

The MIC5318 is designed to provide 300 mA of continuous current. Maximum ambient operating temperature can be calculated based on the output current and the voltage drop across the part. Given that the input voltage is 3.3V, the output voltage is 2.8V and the output current equals 300 mA.

The actual power dissipation of the regulator circuit can be determined using the equation:

EQUATION 4-2:

$$P_D = (V_{IN} - V_{OUT}) \times I_{OUT} + V_{IN} \times I_{GND}$$

Because this device is CMOS and the ground current is typically <100 µA over the load range, the power dissipation contributed by the ground current is <1% and can be ignored for this calculation:

EQUATION 4-3:

$$P_D = (3.3V - 2.8V) \times 300mA = 0.15W$$

To determine the maximum ambient operating temperature of the package, use the junction-to-ambient thermal resistance of the device and the following basic equation:

EQUATION 4-4:

$$P_{D(MAX)} = \frac{T_{J(MAX)} - T_A}{\theta_{JA}}$$

Where:

$T_{J(MAX)}$ = 125°C, the max. junction temp. of the die.

θ_{JA} = 100°C/W

Table 4-1 shows junction-to-ambient thermal resistance for the MIC5318 in the 6-lead 1.6 mm x 1.6 mm UDFN package.

TABLE 4-1: THERMAL RESISTANCE

Package	θ_{JA} for Recommended Min. Footprint
6-Lead UDFN	100°C/W

Substituting P_D for $P_{D(MAX)}$ and solving for the ambient operating temperature will give the maximum operating conditions for the regulator circuit. The junction-to-ambient thermal resistance for the minimum footprint is 100°C/W.

The maximum power dissipation must not be exceeded for proper operation.

For example, when operating the MIC5318-2.8YMT at an input voltage of 3.3V and 300 mA load with a minimum footprint layout, the maximum ambient operating temperature T_A can be determined as follows:

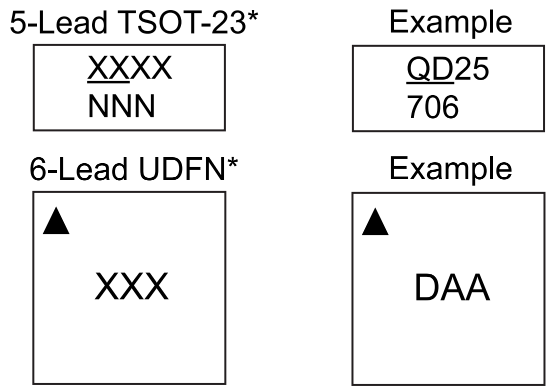
EQUATION 4-5:

$$0.15W = (125°C - T_A) / 100°C/W$$
$$T_A = 110°C$$

Therefore, a 2.8V application with 300 mA of output current can accept an ambient operating temperature of 110°C in a 1.6 mm x 1.6 mm UDFN package. For a full discussion of heat sinking and thermal effects on voltage regulators, refer to the “Regulator Thermals” section of Microchip’s Designing with Low-Dropout Voltage Regulators handbook.

5.0 PACKAGING INFORMATION

5.1 Package Marking Information



Legend:	XX...X	Product code or customer-specific information
	Y	Year code (last digit of calendar year)
	YY	Year code (last 2 digits of calendar year)
	WW	Week code (week of January 1 is week '01')
	NNN	Alphanumeric traceability code
	(e3)	Pb-free JEDEC® designator for Matte Tin (Sn)
	*	This package is Pb-free. The Pb-free JEDEC designator ((e3)) can be found on the outer packaging for this package.
	●, ▲, ▼	Pin one index is identified by a dot, delta up, or delta down (triangle mark).

Note: In the event the full Microchip part number cannot be marked on one line, it will be carried over to the next line, thus limiting the number of available characters for customer-specific information. Package may or may not include the corporate logo.

Underbar (_) and/or Overbar (‾) symbol may not be to scale.

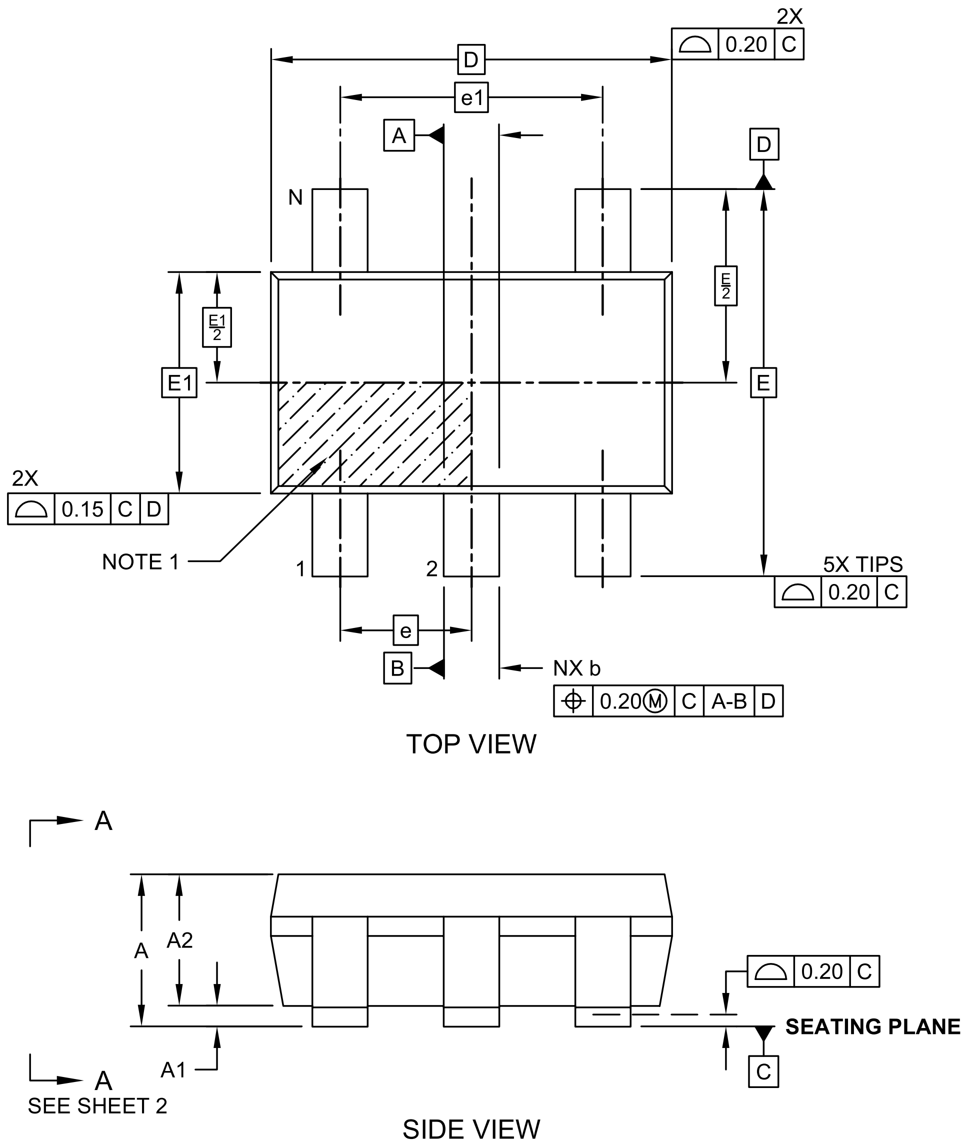
TABLE 5-1: MARKING CODES

Part Number	Marking Code	Output Voltage
MIC5318-1.5YMT	15D	1.5V
MIC5318-1.8YMT	18D	1.8V
MIC5318-2.5YMT	25D	2.5V
MIC5318-2.8YMT	28D	2.8V
MIC5318-3.3YMT	33D	3.3V
MIC5318YMT	DAA	Adjustable
MIC5318-1.5YD5	QD15	1.5V
MIC5318-1.8YD5	QD15	1.8V
MIC5318-2.5YD5	QD25	2.5V
MIC5318-2.8YD5	QD28	2.8V
MIC5318-3.3YD5	QD33	3.3V
MIC5318YD5	QDAA	Adjustable

5-Lead TSOT-23 Package Outline and Recommended Land Pattern

5-Lead Plastic Thin Small Outline Transistor (D5A) [TSOT]
Micrel Legacy Package TSOT-5LD-PL-1

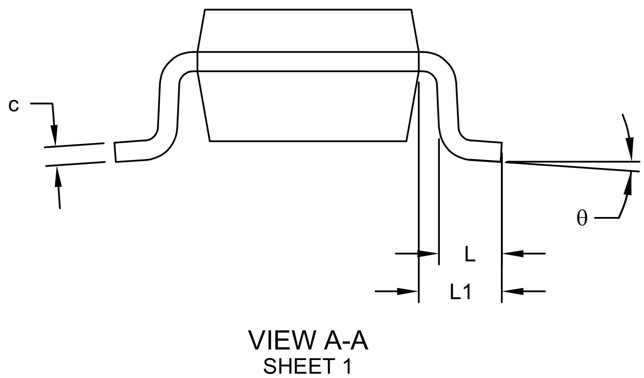
Note:	For the most current package drawings, please see the Microchip Packaging Specification located at http://www.microchip.com/packaging

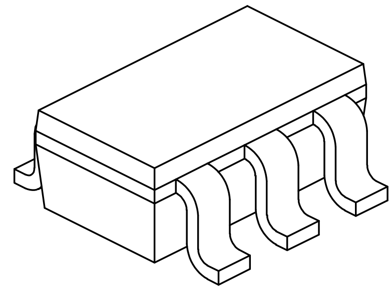


Microchip Technology Drawing C04-1179 Rev A Sheet 1 of 2

5-Lead Plastic Thin Small Outline Transistor (D5A) [TSOT]
Micrel Legacy Package TSOT-5LD-PL-1

Note: For the most current package drawings, please see the Microchip Packaging Specification located at http://www.microchip.com/packaging





		Units	MILLIMETERS	
Dimension Limits		MIN	NOM	MAX
Number of Leads	N		5	
Pitch	e		0.95 BSC	
Outside lead pitch	e1		1.90 BSC	
Overall Height	A	-	-	1.00
Molded Package Thickness	A2	0.84	0.87	0.90
Standoff	A1	0.00	-	0.10
Overall Width	E		2.80 BSC	
Molded Package Width	E1		1.60 BSC	
Overall Length	D		2.90 BSC	
Foot Length	L	0.30	0.40	0.50
Footprint	L1		0.60 REF	
Foot Angle	ϕ	0°	-	4°
Lead Thickness	c		0.127 REF	
Lead Width	b	0.30	-	0.50

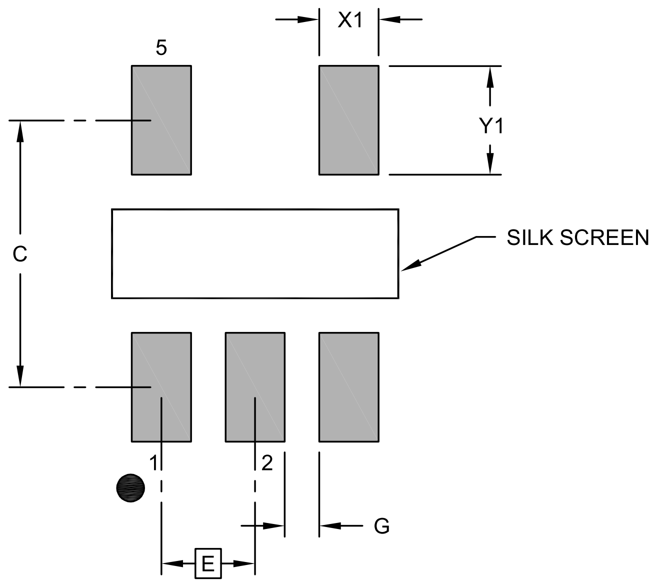
Notes:

1. Dimensions D and E1 do not include mold flash or protrusions. Mold flash or protrusions shall not exceed 0.25mm per side.
2. Dimensioning and tolerancing per ASME Y14.5M
   BSC: Basic Dimension. Theoretically exact value shown without tolerances.
   REF: Reference Dimension, usually without tolerance, for information purposes only.

Microchip Technology Drawing C04-1179 Rev A Sheet 1 of 2

5-Lead Plastic Thin Small Outline Transistor (D5A) [TSOT]
Micrel Legacy Package TSOT-5LD-PL-1

Note:	For the most current package drawings, please see the Microchip Packaging Specification located at http://www.microchip.com/packaging



RECOMMENDED LAND PATTERN

Units		MILLIMETERS		
Dimension Limits		MIN	NOM	MAX
Contact Pitch	E	0.95 BSC		
Contact Pad Spacing	C		2.60	
Contact Pad Width (X5)	X1			0.60
Contact Pad Length (X5)	Y1			1.10
Contact Pad to Center Pad (X2)	G	0.20		

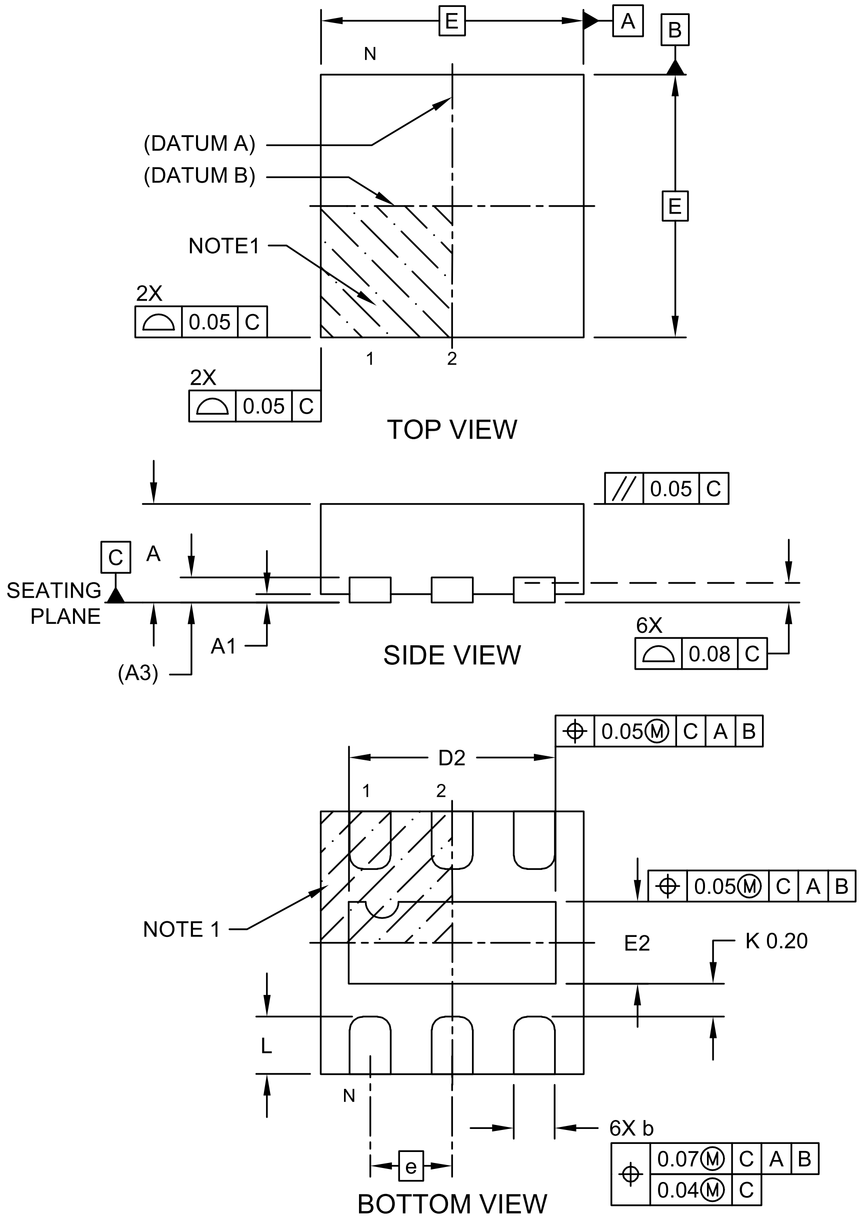
Notes:
1. Dimensioning and tolerancing per ASME Y14.5M
BSC: Basic Dimension. Theoretically exact value shown without tolerances.

Microchip Technology Drawing C04-3179 Rev A

6-Lead UDFN Package Outline and Recommended Land Pattern

6-Lead Ultra Thin Plastic Dual Flat, No Lead (HKA) - 1.6x1.6x0.6 mm Body [UDFN] With 1.26x0.50 mm Exposed Pad; Micrel Legacy Package TDFN1616-6LD-PL-1

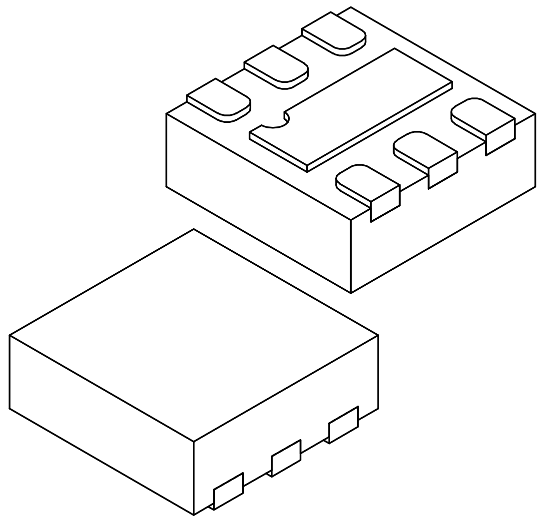
Note: For the most current package drawings, please see the Microchip Packaging Specification located at http://www.microchip.com/packaging



Microchip Technology Drawing C04-1154 Rev A Sheet 1 of 2

6-Lead Ultra Thin Plastic Dual Flat, No Lead (HKA) - 1.6x1.6x0.6 mm Body [UDFN] With 1.26x0.50 mm Exposed Pad; Micrel Legacy Package TDFN1616-6LD-PL-1

Note: For the most current package drawings, please see the Microchip Packaging Specification located at http://www.microchip.com/packaging



Units		MILLIMETERS		
Dimension Limits		MIN	NOM	MAX
Number of Terminals	N		6	
Pitch	e		0.50 BSC	
Overall Height	A	0.50	0.55	0.60
Standoff	A1	0.00	0.02	0.05
Terminal Thickness	A3		0.152 REF	
Overall Length	D		1.60 BSC	
Exposed Pad Length	D2	1.21	1.26	1.31
Overall Width	E		1.60 BSC	
Exposed Pad Width	E2	0.45	0.50	0.55
Terminal Width	b	0.20	0.25	0.30
Terminal Length	L	0.30	0.35	0.40
Terminal-to-Exposed-Pad	K	0.20	–	–

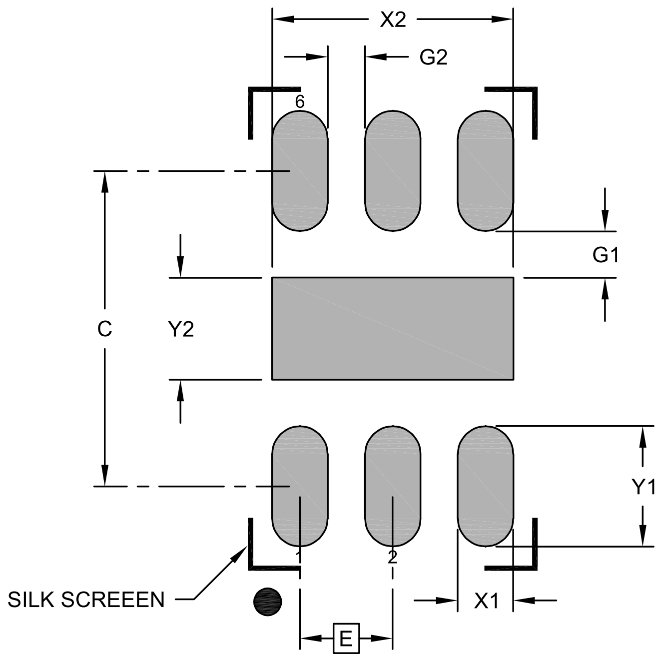
Notes:

1. Pin 1 visual index feature may vary, but must be located within the hatched area.
2. Package is saw singulated
3. Dimensioning and tolerancing per ASME Y14.5M
   BSC: Basic Dimension. Theoretically exact value shown without tolerances.
   REF: Reference Dimension, usually without tolerance, for information purposes only.

Microchip Technology Drawing C04-1154 Rev A Sheet 2 of 2

6-Lead Ultra Thin Plastic Dual Flat, No Lead (HKA) - 1.6x1.6x0.6 mm Body [UDFN] With 1.26x0.50 mm Exposed Pad; Micrel Legacy Package TDFN1616-6LD-PL-1

Note: For the most current package drawings, please see the Microchip Packaging Specification located at http://www.microchip.com/packaging



RECOMMENDED LAND PATTERN

	Units	MILLIMETERS		
	Dimension Limits	MIN	NOM	MAX
Contact Pitch	E		0.50 BSC	
Center Pad Width	X2			1.30
Center Pad Length	Y2			0.55
Contact Pad Spacing	C		1.70	
Contact Pad Width (X6)	X1			0.30
Contact Pad Length (X6)	Y1			0.65
Contact Pad to Center Pad (X6)	G1	0.25		
Contact Pad to Contact Pad (X4)	G2	0.20		

Notes:

1. Dimensioning and tolerancing per ASME Y14.5M

   BSC: Basic Dimension. Theoretically exact value shown without tolerances.

Microchip Technology Drawing C04-3154 Rev A

NOTES:

APPENDIX A: REVISION HISTORY

Revision A (August 2021)

- Converted Micrel document MIC5318 to Microchip data sheet template DS20006578A.
- Minor grammatical text changes throughout.

NOTES:

PRODUCT IDENTIFICATION SYSTEM

To order or obtain information, e.g., on pricing or delivery, contact your local Microchip representative or sales office.

Device	-X.X	X	X	-XX
Part No.	Output Voltage	Temperature Range	Package	Media Type

Device:	MIC5318:	High Performance 300 mA µCap Ultra Low Dropout Regulator
Threshold Voltage:	<blank>=	Adjustable
	1.5 =	1.5V
	1.8 =	1.8V
	2.5 =	2.5V
	2.8 =	2.8V
	3.3 =	3.3V
Temperature Range:	Y =	–40°C to +125°C
Package:	MT =	6-Lead UDFN
	D5 =	5-Lead TSOT-23
Media Type:	TR =	3,000/Reel (TSOT package option)
	TR =	5,000/Reel (UDFN package option)

Examples:

a) MIC5318YMT-TR:	MIC5318, Adjustable Output Voltage, 6-Lead UDFN, –40°C to +125°C Temp. Range, 5,000/Reel
b) MIC5318-1.8YMT-TR:	MIC5318, 1.8V Output Voltage, 6-Lead UDFN, –40°C to +125°C Temp. Range, 5,000/Reel
c) MIC5318-3.3YMT-TR:	MIC5318, 3.3V Output Voltage, 6-Lead UDFN, –40°C to +125°C Temp. Range, 5,000/Reel
d) MIC5318YD5-TR:	MIC5318, Adjustable Output Voltage, 5-Lead TSOT-23, –40°C to +125°C Temp. Range, 3,000/Reel
e) MIC5318-1.5YD5-TR:	MIC5318, 1.5V Output Voltage, 5-Lead TSOT-23, –40°C to +125°C Temp. Range, 3,000/Reel
f) MIC5318-2.5YD5-TR:	MIC5318, 2.5V Output Voltage, 5-Lead TSOT-23, –40°C to +125°C Temp. Range, 3,000/Reel

Note 1: Tape and Reel identifier only appears in the catalog part number description. This identifier is used for ordering purposes and is not printed on the device package. Check with your Microchip Sales Office for package availability with the Tape and Reel option.

NOTES:

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