



High Speed LDO Regulators, High PSRR, Low noise, ME6211 Series

General Description

The ME6211 series are highly accurate, low noise, CMOS LDO Voltage Regulators. Offering low output noise, high ripple rejection ratio, low dropout and very fast turn-on times, the ME6211 series is ideal for today's cutting edge mobile phone. Internally the ME6211 includes a reference voltage source, error amplifiers, driver transistors, current limiters and phase compensators. The ME6211's current limiters' foldback circuit also operates as a short protect for the output current limiter and the output pin. The ME6211 series is also fully compatible with low ESR ceramic capacitors, reducing cost and improving output stability. This high level of output stability is maintained even during frequent load fluctuations, due to the excellent transient response performance and high PSRR achieved across a broad range of frequencies. The CE function allows the output of regulator to be turned off, resulting in greatly reduced power consumption.

Package

- 3-pin SOT89-3, SOT23-3
- 4-pin SOT343R, FBP1*1-4L
- 5-pin SOT23-5, SOT353
- 6-pin DFN2*2-6L

Features

- Maximum Output Current: 500mA
($V_{IN}=4.3V, V_{OUT}=3.3V$)
- Dropout Voltage: 100mV@ $I_{OUT}=100mA$
- Operating Voltage Range: 1.2V~6.0V
- Highly Accuracy: $\pm 1\%$
- Low Power Consumption: 30uA (TYP.)
- Standby Current: 0.1uA (TPY.)
- High Ripple Rejection: 70dB@1KHz
(ME6211C33)
- Low output noise: 50uVrms
- Line Regulation: 0.05% (TYP.)

Typical Application

- Mobile phones
- Cordless phones, radio communication equipment
- Portable games
- Cameras, Video cameras
- Reference voltage sources
- Battery powered equipment

Typical Application Circuit

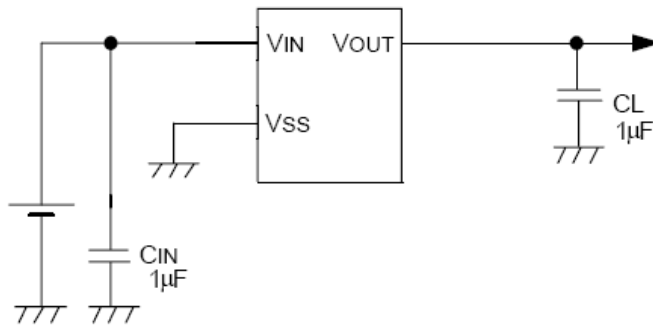


Fig1. ME6211A series

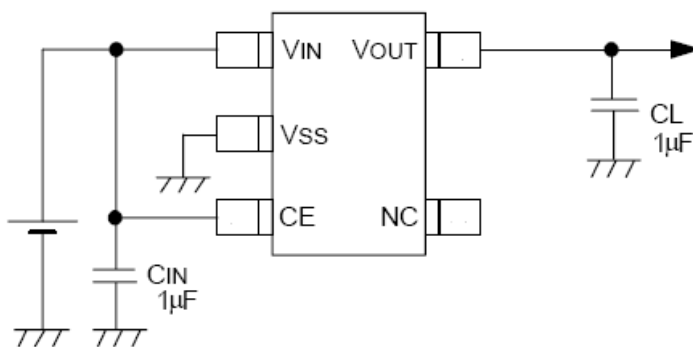


Fig2. ME6211C series

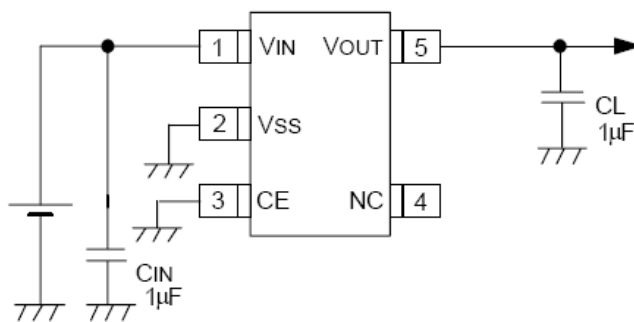
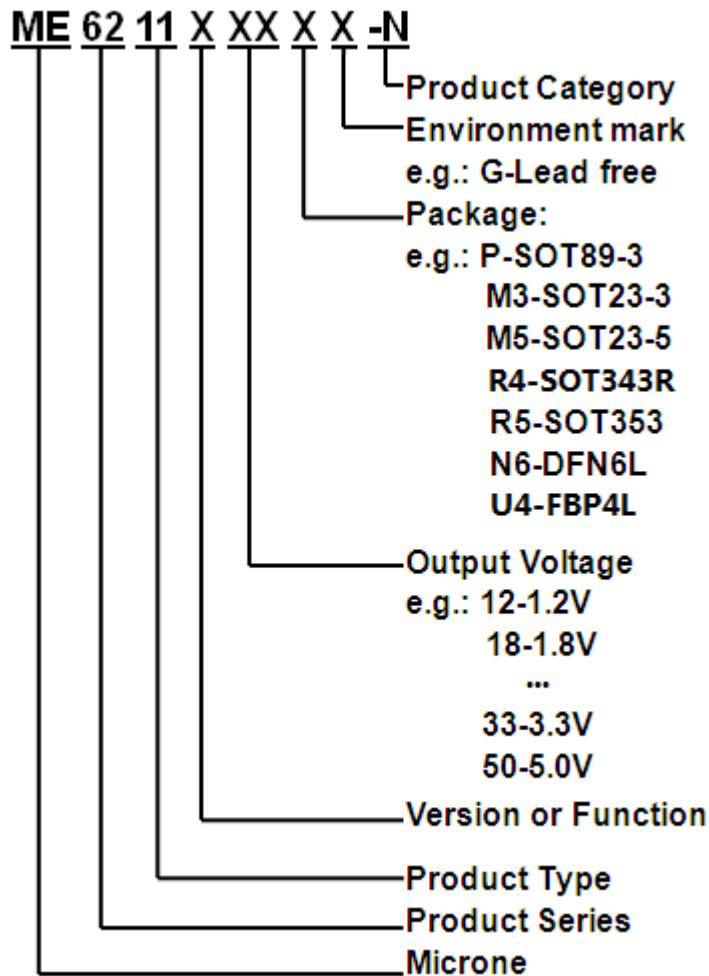


Fig3. ME6211H series

Selection Guide



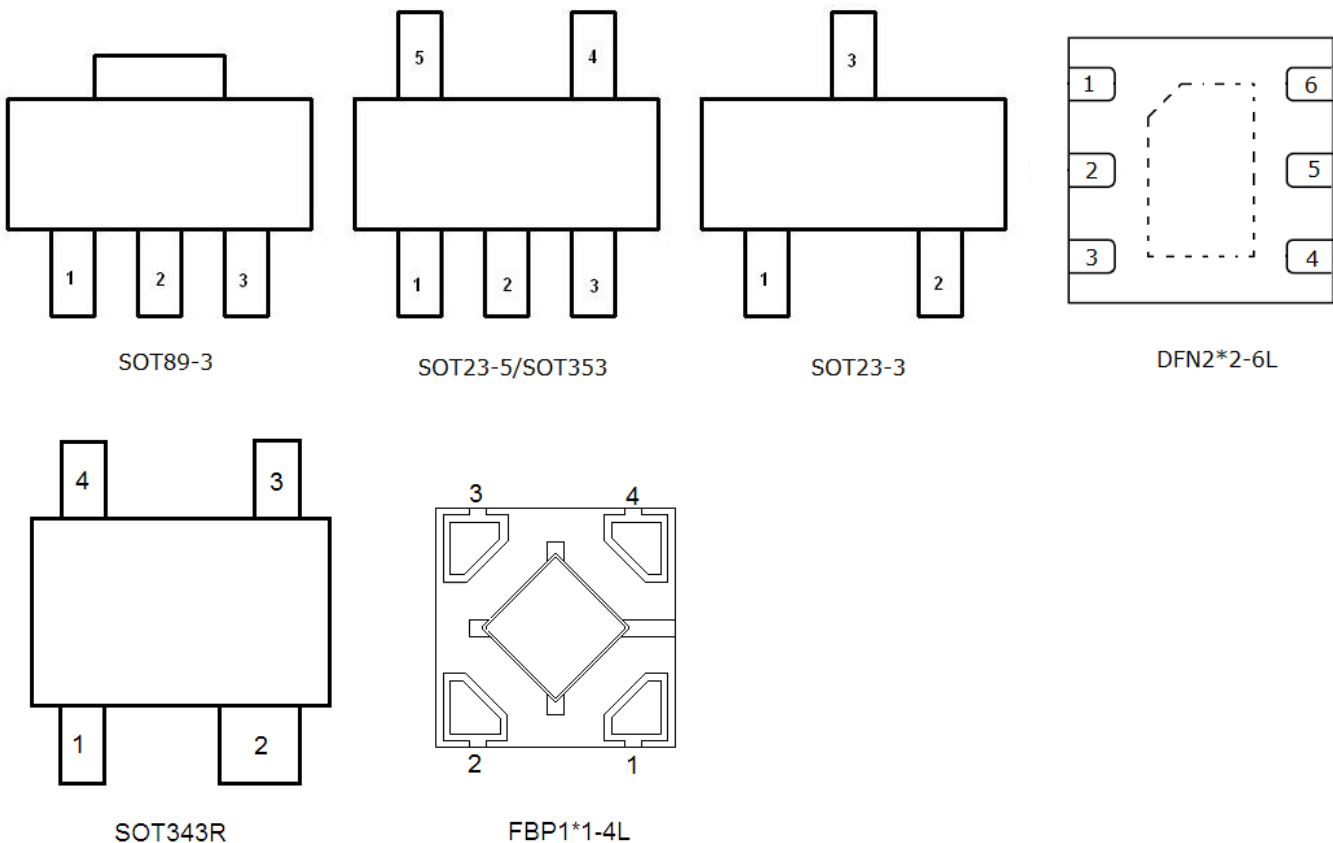
| product series | product function | Output voltage | Package |
|-----------------|--|----------------|------------------|
| ME6211A12PG-N | Enable the internal connection of high | 1.2V | SOT89-3 |
| ME6211C33M5G-N | Enable can be set | 3.3V | SOT23-5 |
| ME6211C33R4G-N | Enable can be set | 3.3V | SOT343R |
| ME6211C33U4AG-N | Enable can be set | 3.3V | FBP1*1-4L (0.37) |
| ME6211C25N6AG-N | Enable can be set | 2.5V | DFN2*2-6L(0.75) |
| ME6211H15M5G-N | Enable connected to a low | 1.5V | SOT23-5 |

NOTE: At present ,there are twelve kinds of voltage value:

1.0、1.2V、1.5V、1.8V、2.1V、2.5V、2.7V、2.8V、2.9V、3.0V、3.3V、5.0V。

If you need other voltage and package, please contact our sales staff。

Pin Configuration



Pin Assignment

ME6211AXXG

| Pin Number | | | Pin Name | Functions |
|------------|---------|---------|-----------|-------------|
| M3 | P | P1 | | |
| SOT23-3 | SOT89-3 | SOT89-3 | | |
| 1 | 1 | 2 | V_{SS} | Ground |
| 2 | 3 | 1 | V_{OUT} | Output |
| 3 | 2 | 3 | V_{IN} | Power Input |

The difference of printing on the chip between P and P1 is : P: 6211A , P1: 6211A1

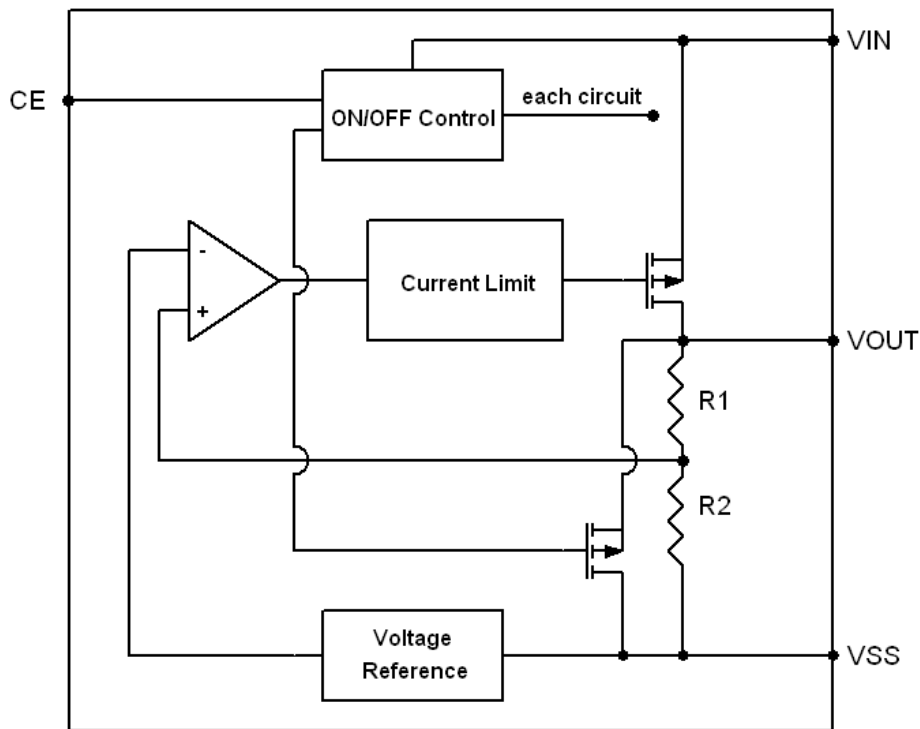
ME6211AXXG-DS

| Pin Number | Pin Name | Functions |
|------------|-----------|-------------|
| SOT23-3 | | |
| 1 | V_{IN} | Power Input |
| 2 | V_{OUT} | Output |
| 3 | V_{SS} | Ground |

ME6211CXXG/ ME6211HXXG

| Pin Number | | | | Pin Name | Functions |
|----------------|-----------|---------|-----------|-----------|------------------|
| SOT23-5/SOT353 | DFN2*2-6L | SOT343R | FBP1*1-4L | | |
| 1 | 3 | 4 | 4 | V_{IN} | Power Input |
| 2 | 2 | 2 | 2 | V_{SS} | Ground |
| 3 | 1 | 1 | 3 | CE | ON / OFF Control |
| 4 | 5,6 | - | - | NC | No Connect |
| 5 | 4 | 3 | 1 | V_{OUT} | Output |

Block Diagram



Absolute Maximum Ratings

| Parameter | Symbol | Ratings | Units |
|-----------------------------|-----------|--------------------------------|-------------|
| Input Voltage | V_{IN} | 6.5 | V |
| Output Current | I_{OUT} | 600 | mA |
| Output Voltage | V_{OUT} | $V_{SS}-0.3 \sim V_{IN} + 0.3$ | V |
| CE Pin Voltage | V_{CE} | $V_{SS}-0.3 \sim V_{IN} + 0.3$ | V |
| Power Dissipation | SOT23-3 | 300 | mW |
| | SOT353 | 250 | |
| | DFN2*2-6L | 300 | |
| | SOT89 | 500 | |
| | SOT343R | 250 | |
| | FBP1*1-4L | 250 | |
| Operating Temperature Range | T_{OPR} | $-40 \sim +150$ | $^{\circ}C$ |
| Storage Temperature Range | T_{STG} | $-40 \sim +150$ | $^{\circ}C$ |

Electrical Characteristics

ME6211C10 ($V_{IN}=V_{OUT}+1V$, $V_{CE}=V_{IN}$, $C_{IN}=C_L=1\mu F$, $T_a=25^{\circ}C$, unless otherwise noted)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------|--|--|----------------------------|--------------------------|--------|---------------|
| Output Voltage | $V_{OUT(E)}$ (Note 2) | $I_{OUT}=30mA$, $V_{IN}=V_{OUT}+1V$ | X 0.99 | $V_{OUT(T)}$ (Note 1) | X 1.01 | V |
| Maximum Output Current | I_{OUTMAX} | $V_{IN}=V_{OUT}+1V$ | | 300 | | mA |
| Load Regulation | ΔV_{OUT} | $V_{IN}=V_{OUT}+1V$, $1mA \leq I_{OUT} \leq 100mA$ | | 5 | | mV |
| Dropout Voltage (Note 1) | V_{DIF1} | $I_{OUT}=100mA$ | | 400 | | mV |
| | V_{DIF2} | $I_{OUT}=200mA$ | | 650 | | mV |
| Supply Current | I_{SS} | $V_{IN}=V_{OUT}+1V$ | | 30 | 60 | μA |
| Stand-by Current | I_{CEL} | $V_{CE}=0V$ | | 0.1 | 1.0 | μA |
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$ | $I_{OUT}=30mA$ $V_{OUT}+1V \leq V_{IN} \leq 6.5V$ | | 0.035 | | %/V |
| CE "High" Voltage | VCEH | Start up | 1.0 | | | V |
| CE "Low" Voltage | VCEL | Shut down | | | 0.5 | V |
| Output noise | EN | $I_{OUT}=40mA$, 300Hz~50kHz | | 50 | | μV_{rms} |
| Ripple Rejection Rate | PSRR | $V_{IN}=[V_{OUT}+1]V+1V_{p-pAC}$ | $I_{OUT}=10mA$, 1kHz | 70 | | dB |
| | | | $I_{OUT}=100mA$, 10kHz | 62 | | |

ME6211C12 ($V_{IN}=V_{OUT}+1V$, $V_{CE}=V_{IN}$, $C_{IN}=C_L=1\mu F$, $T_a=25^{\circ}C$, unless otherwise noted)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------|--|--|----------------------------|--------------------------|--------|---------------|
| Output Voltage | $V_{OUT(E)}$ (Note 2) | $I_{OUT}=30mA$, $V_{IN}=V_{OUT}+1V$ | X 0.99 | $V_{OUT(T)}$ (Note 1) | X 1.01 | V |
| Maximum Output Current | I_{OUTMAX} | $V_{IN}=V_{OUT}+1V$ | | 300 | | mA |
| Load Regulation | ΔV_{OUT} | $V_{IN}=V_{OUT}+1V$, $1mA \leq I_{OUT} \leq 100mA$ | | 8 | | mV |
| Dropout Voltage (Note 1) | V_{DIF1} | $I_{OUT}=100mA$ | | 280 | | mV |
| | V_{DIF2} | $I_{OUT}=200mA$ | | 500 | | mV |
| Supply Current | I_{SS} | $V_{IN}=V_{OUT}+1V$ | | 30 | 60 | μA |
| Stand-by Current | I_{CEL} | $V_{CE}=0V$ | | 0.1 | 1.0 | μA |
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$ | $I_{OUT}=30mA$ $V_{OUT}+1V \leq V_{IN} \leq 6.5V$ | | 0.03 | | %/V |
| CE "High" Voltage | VCEH | Start up | 1.0 | | | V |
| CE "Low" Voltage | VCEL | Shut down | | | 0.5 | V |
| Output noise | EN | $I_{OUT}=40mA$, 300Hz~50kHz | | 50 | | μV_{rms} |
| Ripple Rejection Rate | PSRR | $V_{IN}=[V_{OUT}+1]V+1V_{p-pAC}$ | $I_{OUT}=10mA$, 1kHz | 70 | | dB |
| | | | $I_{OUT}=100mA$, 10kHz | 62 | | |

ME6211C18 ($V_{IN} = V_{OUT} + 1V$, $V_{CE} = V_{IN}$, $C_{IN} = C_L = 1\mu F$, $T_a = 25^\circ C$, unless otherwise noted)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------|--|--|------------------------------|--------------------------|--------|---------------|
| Output Voltage | $V_{OUT(E)}$ (Note 2) | $I_{OUT} = 30mA$, $V_{IN} = V_{OUT} + 1V$ | X 0.99 | $V_{OUT(T)}$ (Note 1) | X 1.01 | V |
| Maximum Output Current | I_{OUTMAX} | $V_{IN} = V_{OUT} + 1V$ | | 300 | | mA |
| Load Regulation | ΔV_{OUT} | $V_{IN} = V_{OUT} + 1V$, $1mA \leq I_{OUT} \leq 100mA$ | | 9 | | mV |
| Dropout Voltage (Note 1) | V_{DIF1} | $I_{OUT} = 100mA$ | | 200 | | mV |
| | V_{DIF2} | $I_{OUT} = 200mA$ | | 400 | | mV |
| Supply Current | I_{SS} | $V_{IN} = V_{OUT} + 1V$ | | 30 | 60 | μA |
| Stand-by Current | I_{CEL} | $V_{CE} = 0V$ | | 0.1 | 1.0 | μA |
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$ | $I_{OUT} = 30mA$ $V_{OUT} + 1V \leq V_{IN} \leq 6.5V$ | | 0.05 | | %/V |
| CE "High" Voltage | VCEH | Start up | 1.0 | | | V |
| CE "Low" Voltage | VCEL | Shut down | | | 0.5 | V |
| Output noise | EN | $I_{OUT} = 40mA$, 300Hz~50kHz | | 50 | | μV_{rms} |
| Ripple Rejection Rate | PSRR | $V_{IN} = [V_{OUT} + 1]V + 1V_{p-pAC}$ | $I_{OUT} = 10mA$, 1kHz | 70 | | dB |
| | | | $I_{OUT} = 100mA$, 10kHz | 62 | | |

ME6211C25 ($V_{IN} = V_{OUT} + 1V$, $V_{CE} = V_{IN}$, $C_{IN} = C_L = 1\mu F$, $T_a = 25^\circ C$, unless otherwise noted)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------|--|--|------------------------------|--------------------------|--------|---------------|
| Output Voltage | $V_{OUT(E)}$ (Note 2) | $I_{OUT} = 30mA$, $V_{IN} = V_{OUT} + 1V$ | X 0.99 | $V_{OUT(T)}$ (Note 1) | X 1.01 | V |
| Maximum Output Current | I_{OUTMAX} | $V_{IN} = V_{OUT} + 1V$ | | 400 | | mA |
| Load Regulation | ΔV_{OUT} | $V_{IN} = V_{OUT} + 1V$, $1mA \leq I_{OUT} \leq 100mA$ | | 9 | | mV |
| Dropout Voltage (Note 1) | V_{DIF1} | $I_{OUT} = 100mA$ | | 110 | | mV |
| | V_{DIF2} | $I_{OUT} = 200mA$ | | 220 | | mV |
| Supply Current | I_{SS} | $V_{IN} = V_{OUT} + 1V$ | | 30 | 60 | μA |
| Stand-by Current | I_{CEL} | $V_{CE} = 0V$ | | 0.1 | 1.0 | μA |
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$ | $I_{OUT} = 30mA$ $V_{OUT} + 1V \leq V_{IN} \leq 6.5V$ | | 0.04 | | %/V |
| CE "High" Voltage | VCEH | Start up | 1.0 | | | V |
| CE "Low" Voltage | VCEL | Shut down | | | 0.5 | V |
| Output noise | EN | $I_{OUT} = 40mA$, 300Hz~50kHz | | 50 | | μV_{rms} |
| Ripple Rejection Rate | PSRR | $V_{IN} = [V_{OUT} + 1]V + 1V_{p-pAC}$ | $I_{OUT} = 10mA$, 1kHz | 70 | | dB |
| | | | $I_{OUT} = 100mA$, 10kHz | 62 | | |
| | | | $I_{OUT} = 200mA$, 10kHz | 62 | | |
| Short-circuit Current | I_{SHORT} | $V_{IN} = V_{OUT} + 1V$, $V_{CE} = V_{IN}$, $V_{OUT} = 0V$ | | 60 | | mA |

ME6211C28 ($V_{IN}=V_{OUT}+1V$, $V_{CE}=V_{IN}$, $C_{IN}=C_L=1\mu F$, $T_a=25^\circ C$, unless otherwise noted)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------|--|--|----------------------------|--------------------------|--------|---------------|
| Output Voltage | $V_{OUT(E)}$ (Note 2) | $I_{OUT}=30mA$, $V_{IN}=V_{OUT}+1V$ | X 0.99 | $V_{OUT(T)}$ (Note 1) | X 1.01 | V |
| Maximum Output Current | I_{OUTMAX} | $V_{IN}=V_{OUT}+1V$ | | 450 | | mA |
| Load Regulation | ΔV_{OUT} | $V_{IN}=V_{OUT}+1V$, $1mA \leq I_{OUT} \leq 100mA$ | | 7 | | mV |
| Dropout Voltage (Note 1) | V_{DIF1} | $I_{OUT}=100mA$ | | 110 | | mV |
| | V_{DIF2} | $I_{OUT}=200mA$ | | 220 | | mV |
| Supply Current | I_{SS} | $V_{IN}=V_{OUT}+1V$ | | 30 | 60 | μA |
| Stand-by Current | I_{CEL} | $V_{CE}=0V$ | | 0.1 | 1.0 | μA |
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$ | $I_{OUT}=30mA$ $V_{OUT}+1V \leq V_{IN} \leq 6.5V$ | | 0.04 | | %/V |
| CE“High”Voltage | VCEH | Start up | 1.0 | | | V |
| CE “Low” Voltage | VCEL | Shut down | | | 0.5 | V |
| Output noise | EN | $I_{OUT}=40mA$, 300Hz~50kHz | | 50 | | μV_{rms} |
| Ripple Rejection Rate | PSRR | $V_{IN}=[V_{OUT}+1]V$ $+1Vp-pAC$ | $I_{OUT}=10mA$, 1kHz | | 70 | dB |
| | | | $I_{OUT}=100mA$, 10kHz | | 62 | |
| | | | $I_{OUT}=200mA$, 10kHz | | 62 | |
| Short-circuit Current | I_{SHORT} | $V_{IN}=V_{OUT}+1V$, $V_{CE}=V_{IN}$, $V_{OUT}=0V$ | | 65 | | mA |

ME6211C30 ($V_{IN}=V_{OUT}+1V$, $V_{CE}=V_{IN}$, $C_{IN}=C_L=1\mu F$, $T_a=25^\circ C$, unless otherwise noted)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------|--|--|--------------------------|--------------------------|--------|---------------|
| Output Voltage | $V_{OUT(E)}$ (Note 2) | $I_{OUT}=30mA$, $V_{IN}=V_{OUT}+1V$ | X 0.99 | $V_{OUT(T)}$ (Note 1) | X 1.01 | V |
| Maximum Output Current | I_{OUTMAX} | $V_{IN}=V_{OUT}+1V$ | | 500 | | mA |
| Load Regulation | ΔV_{OUT} | $V_{IN}=V_{OUT}+1V$, $1mA \leq I_{OUT} \leq 100mA$ | | 8 | | mV |
| Dropout Voltage (Note 1) | V_{DIF1} | $I_{OUT}=100mA$ | | 100 | | mV |
| | V_{DIF2} | $I_{OUT}=200mA$ | | 210 | | mV |
| Supply Current | I_{SS} | $V_{IN}=V_{OUT}+1V$ | | 30 | 60 | μA |
| Stand-by Current | I_{CEL} | $V_{CE}=0V$ | | 0.1 | 1.0 | μA |
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$ | $I_{OUT}=30mA$ $V_{OUT}+1V \leq V_{IN} \leq 6.5V$ | | 0.05 | | %/V |
| CE “High” Voltage | VCEH | Start up | 1.0 | | | V |
| CE “Low” Voltage | VCEL | Shut down | | | 0.5 | V |
| Output noise | EN | $I_{OUT}=40mA$, 300Hz~50kHz | | 50 | | μV_{rms} |
| Ripple Rejection Rate | PSRR | $V_{IN}=[V_{OUT}+1]V$ $+1Vp-pAC$ | $I_{OUT}=10mA$, 1kHz | | 70 | dB |
| | | | $I_{OUT}=100mA$, | | 62 | |

| | | | | | | |
|-----------------------|-------------|--|----------------------------|--|----|----|
| | | | 10kHz | | | |
| | | | $I_{OUT}=200mA$, 10kHz | | 62 | |
| Short-circuit Current | I_{SHORT} | $V_{IN}=V_{OUT}+1V$, $V_{CE}=V_{IN}$, $V_{OUT}=0V$ | | | 65 | mA |

ME6211C33 ($V_{IN}=V_{OUT}+1V$, $V_{CE}=V_{IN}$, $C_{IN}=C_L=1\mu F$, $T_a=25^\circ C$, unless otherwise noted)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units | |
|-----------------------------|--|--|----------------------------|--------------------------|--------|---------------|----|
| Output Voltage | $V_{OUT(E)}$ (Note 2) | $I_{OUT}=30mA$, $V_{IN}=V_{OUT}+1V$ | X 0.99 | $V_{OUT(T)}$ (Note 1) | X 1.01 | V | |
| Maximum Output Current | I_{OUTMAX} | $V_{IN}=V_{OUT}+1V$ | | 500 | | mA | |
| Load Regulation | ΔV_{OUT} | $V_{IN}=V_{OUT}+1V$, $1mA \leq I_{OUT} \leq 100mA$ | | 9 | | mV | |
| Dropout Voltage (Note 1) | V_{DIF1} | $I_{OUT}=100mA$ | | 120 | | mV | |
| | V_{DIF2} | $I_{OUT}=200mA$ | | 260 | | mV | |
| Supply Current | I_{SS} | $V_{IN}=V_{OUT}+1V$ | | 30 | 60 | μA | |
| Stand-byCurrent | I_{CEL} | $V_{CE}=0V$ | | 0.1 | 1.0 | μA | |
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$ | $I_{OUT}=30mA$ $V_{OUT}+1V \leq V_{IN} \leq 6.5V$ | | 0.05 | | %/V | |
| CE "High" Voltage | V_{CEH} | Start up | 1.0 | | | V | |
| CE "Low" Voltage | V_{CEL} | Shut down | | | 0.5 | V | |
| Output noise | EN | $I_{OUT}=40mA$, 300Hz~50kHz | | 50 | | μV_{rms} | |
| Ripple Rejection Rate | PSRR | $V_{IN}=[V_{OUT}+1]V$ $+1Vp-pAC$ | $I_{OUT}=10mA$, 1kHz | | 70 | | dB |
| | | | $I_{OUT}=100mA$, 10kHz | | 62 | | |
| | | | $I_{OUT}=200mA$, 10kHz | | 62 | | |
| Short-circuit Current | I_{SHORT} | $V_{IN}=V_{OUT}+1V$, $V_{CE}=V_{IN}$, $V_{OUT}=0V$ | | 70 | | mA | |

ME6211C33 (SOT343R, FBP1*1-4L, SOT353)

($V_{IN}=V_{OUT}+1V$, $V_{CE}=V_{IN}$, $C_{IN}=C_L=1\mu F$, $T_a=25^\circ C$, unless otherwise noted)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------|--|--|--------|--------------------------|--------|---------|
| Output Voltage | $V_{OUT(E)}$ (Note 2) | $I_{OUT}=30mA$, $V_{IN}=V_{OUT}+1V$ | X 0.99 | $V_{OUT(T)}$ (Note 1) | X 1.01 | V |
| Maximum Output Current | I_{OUTMAX} | $V_{IN}=V_{OUT}+1V$ | | 400 | | mA |
| Load Regulation | ΔV_{OUT} | $V_{IN}=V_{OUT}+1V$, $1mA \leq I_{OUT} \leq 100mA$ | | 9 | | mV |
| Dropout Voltage (Note 1) | V_{DIF1} | $I_{OUT}=100mA$ | | 120 | | mV |
| | V_{DIF2} | $I_{OUT}=200mA$ | | 260 | | mV |
| Supply Current | I_{SS} | $V_{IN}=V_{OUT}+1V$ | | 30 | 60 | μA |
| Stand-byCurrent | I_{CEL} | $V_{CE}=0V$ | | 0.1 | 1.0 | μA |
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$ | $I_{OUT}=30mA$ $V_{OUT}+1V \leq V_{IN} \leq 6.5V$ | | 0.05 | | %/V |
| CE "High" Voltage | V_{CEH} | Start up | 1.0 | | | V |

| | | | | | | |
|-----------------------|--------------------|---|-----------------------------------|--|-----|-------|
| CE "Low" Voltage | V _{CEL} | Shut down | | | 0.5 | V |
| Output noise | EN | I _{OUT} =40mA, 300Hz~50kHz | | | 50 | uVrms |
| Ripple Rejection Rate | PSRR | V _{IN} = [V _{OUT} +1]V +1Vp-pAC | I _{OUT} =10mA, 1kHz | | 70 | dB |
| | | | I _{OUT} =100mA, 10kHz | | 62 | |
| | | | I _{OUT} =200mA, 10kHz | | 62 | |
| Short-circuit Current | I _{SHORT} | V _{IN} = V _{OUT} +1V, V _{CE} = V _{IN} , V _{OUT} =0V | | | 70 | mA |

ME6211C50 (V_{IN}= V_{OUT}+1V, V_{CE} = V_{IN}, C_{IN}=C_L=1uF, Ta=25°C, unless otherwise noted)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------|--|---|-----------------------------------|----------------------------------|--------|-------|
| Output Voltage | V _{OUT} (E) (Note 2) | I _{OUT} =30mA, V _{IN} = V _{OUT} +1V | X 0.99 | V _{OUT} (T) (Note 1) | X 1.01 | V |
| Maximum Output Current | I _{OUTMAX} | V _{IN} = V _{OUT} +1V | | 500 | | mA |
| Load Regulation | ΔV _{OUT} | V _{IN} = V _{OUT} +1V , 1mA≤I _{OUT} ≤100mA | | 8 | | mV |
| Dropout Voltage (Note 1) | V _{DIF1} | I _{OUT} =100mA | | 100 | | mV |
| | V _{DIF2} | I _{OUT} =200mA | | 200 | | mV |
| Supply Current | I _{SS} | V _{IN} = V _{OUT} +1V | | 40 | 60 | μA |
| Stand-by Current | I _{CEL} | V _{CE} =0V | | 0.1 | 1.0 | μA |
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$ | I _{OUT} =30mA V _{OUT} +1V ≤V _{IN} ≤6.5V | | 0.05 | | %/V |
| CE "High" Voltage | V _{CEH} | Start up | 1.0 | | | V |
| CE "Low" Voltage | V _{CEL} | Shut down | | | 0.7 | V |
| Output noise | EN | I _{OUT} =40mA, 300Hz~50kHz | | | 50 | uVrms |
| Ripple Rejection Rate | PSRR | V _{IN} = [V _{OUT} +1]V +1Vp-pAC | I _{OUT} =10mA, 1kHz | | 70 | dB |
| | | | I _{OUT} =100mA, 10kHz | | 62 | |
| | | | I _{OUT} =200mA, 10kHz | | 62 | |
| Short-circuit Current | I _{SHORT} | V _{IN} = V _{OUT} +1V, V _{CE} = V _{IN} , V _{OUT} =0V | | | 100 | mA |

ME6211A30 (V_{IN}= V_{OUT}+1V, C_{IN}=C_L=1uF, Ta=25°C, unless otherwise noted)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|------------------------|----------------------------------|---|--------|----------------------------------|--------|-------|
| Output Voltage | V _{OUT} (E) (Note 2) | I _{OUT} =30mA, V _{IN} = V _{OUT} +1V | X 0.99 | V _{OUT} (T) (Note 1) | X 1.01 | V |
| Maximum Output Current | I _{OUTMAX} | V _{IN} = V _{OUT} +1V | | 500 | | mA |
| Load Regulation | ΔV _{OUT} | V _{IN} = V _{OUT} +1V , 1mA≤I _{OUT} ≤100mA | | 8 | | mV |
| Dropout Voltage | V _{DIF1} | I _{OUT} =100mA | | 100 | | mV |

| | | | | | | |
|-----------------------|--|--|--------------------------|------|----|---------------|
| (Note 1) | V_{DIF2} | $I_{OUT} = 200mA$ | | 210 | | mV |
| Supply Current | I_{SS} | $V_{IN} = V_{OUT} + 1V$ | | 30 | 60 | μA |
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$ | $I_{OUT} = 30mA$ $V_{OUT} + 1V \leq V_{IN} \leq 6.5V$ | | 0.05 | | %/V |
| Output noise | EN | $I_{OUT} = 40mA, 300Hz \sim 50kHz$ | | 50 | | μV_{rms} |
| Ripple Rejection Rate | PSRR | $V_{IN} = [V_{OUT} + 1]V + 1V_{p-pAC}$ | $I_{OUT} = 10mA, 1kHz$ | 70 | | dB |
| | | | $I_{OUT} = 100mA, 10kHz$ | 62 | | |
| | | | $I_{OUT} = 200mA, 10kHz$ | 62 | | |
| Short-circuit Current | I_{SHORT} | $V_{IN} = V_{OUT} + 1V, V_{CE} = V_{IN}, V_{OUT} = 0V$ | | 65 | | mA |

ME6211A33 ($V_{IN} = V_{OUT} + 1V, C_{IN} = C_L = 1\mu F, T_a = 25^\circ C$, unless otherwise noted)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------|--|---|--------------------------|--------------------------|--------|---------------|
| Output Voltage | $V_{OUT(E)}$ (Note 2) | $I_{OUT} = 30mA,$ $V_{IN} = V_{OUT} + 1V$ | X 0.99 | $V_{OUT(T)}$ (Note 1) | X 1.01 | V |
| Maximum Output Current | I_{OUTMAX} | $V_{IN} = V_{OUT} + 1V$ | | 500 | | mA |
| Load Regulation | ΔV_{OUT} | $V_{IN} = V_{OUT} + 1V,$ $1mA \leq I_{OUT} \leq 100mA$ | | 9 | | mV |
| Dropout Voltage (Note 1) | V_{DIF1} | $I_{OUT} = 100mA$ | | 120 | | mV |
| | V_{DIF2} | $I_{OUT} = 200mA$ | | 260 | | mV |
| Supply Current | I_{SS} | $V_{IN} = V_{OUT} + 1V$ | | 30 | 60 | μA |
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$ | $I_{OUT} = 30mA$ $V_{OUT} + 1V \leq V_{IN} \leq 6.5V$ | | 0.1 | 1.0 | %/V |
| Output noise | EN | $I_{OUT} = 40mA, 300Hz \sim 50kHz$ | | 50 | | μV_{rms} |
| Ripple Rejection Rate | PSRR | $V_{IN} = [V_{OUT} + 1]V + 1V_{p-pAC}$ | $I_{OUT} = 10mA, 1kHz$ | 70 | | dB |
| | | | $I_{OUT} = 100mA, 10kHz$ | 62 | | |
| | | | $I_{OUT} = 200mA, 10kHz$ | 62 | | |
| Short-circuit Current | I_{SHORT} | $V_{IN} = V_{OUT} + 1V, V_{OUT} = 0V$ | | 70 | | mA |

ME6211A25 ($V_{IN} = V_{OUT} + 1V, C_{IN} = C_L = 1\mu F, T_a = 25^\circ C$, unless otherwise noted)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------|--------------------------|---|--------|--------------------------|--------|---------|
| Output Voltage | $V_{OUT(E)}$ (Note 2) | $I_{OUT} = 30mA,$ $V_{IN} = V_{OUT} + 1V$ | X 0.99 | $V_{OUT(T)}$ (Note 1) | X 1.01 | V |
| Maximum Output Current | I_{OUTMAX} | $V_{IN} = V_{OUT} + 1V$ | | 400 | | mA |
| Load Regulation | ΔV_{OUT} | $V_{IN} = V_{OUT} + 1V,$ $1mA \leq I_{OUT} \leq 100mA$ | | 9 | | mV |
| Dropout Voltage (Note 1) | V_{DIF1} | $I_{OUT} = 100mA$ | | 80 | | mV |
| | V_{DIF2} | $I_{OUT} = 200mA$ | | 180 | | mV |
| Supply Current | I_{SS} | $V_{IN} = V_{OUT} + 1V$ | | 30 | 60 | μA |

| | | | | | | |
|-----------------------|--|--|---------------------------|-----|-----|-------|
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$ | $I_{OUT} = 30mA$ $V_{OUT} + 1V \leq V_{IN} \leq 6.5V$ | | 0.1 | 1.0 | %/V |
| Output noise | EN | $I_{OUT} = 40mA$, 300Hz~50kHz | | 50 | | uVrms |
| Ripple Rejection Rate | PSRR | $V_{IN} = [V_{OUT} + 1]V$ $+1Vp-pAC$ | $I_{OUT} = 10mA$ 1kHz | 70 | | dB |
| | | | $I_{OUT} = 100mA$, 10kHz | 62 | | |
| | | | $I_{OUT} = 200mA$, 10kHz | 62 | | |
| Short-circuit Current | I_{SHORT} | $V_{IN} = V_{OUT} + 1V$, $V_{OUT} = 0V$ | | 60 | | mA |

ME6211H15

($V_{IN} = V_{OUT} + 1V$, $V_{CE} = GND$, $C_{IN} = C_L = 1\mu F$, $T_a = 25^\circ C$, unless otherwise noted)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------|--|--|-------------------------|--------------------------|--------|---------|
| Output Voltage | $V_{OUT}(E)$ (Note 2) | $I_{OUT} = 30mA$, $V_{IN} = V_{OUT} + 1V$ | X 0.98 | $V_{OUT}(T)$ (Note 1) | X 1.02 | V |
| Maximum Output Current | I_{OUTMAX} | $V_{IN} = V_{OUT} + 1V$ | | 300 | | mA |
| Load Regulation | ΔV_{OUT} | $V_{IN} = V_{OUT} + 1V$, $1mA \leq I_{OUT} \leq 100mA$ | | 9 | | mV |
| Dropout Voltage (Note 1) | V_{DIF1} | $I_{OUT} = 100mA$ | | 200 | | mV |
| | V_{DIF2} | $I_{OUT} = 200mA$ | | 400 | | mV |
| Supply Current | I_{SS} | $V_{IN} = V_{OUT} + 1V$ | | 30 | 60 | μA |
| Stand-by Current | I_{CEL} | $V_{CE} = V_{IN}$ | | 0.1 | 1.0 | μA |
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$ | $I_{OUT} = 30mA$ $V_{OUT} + 1V \leq V_{IN} \leq 6.5V$ | | 0.05 | | %/V |
| CE "High" Voltage | V_{CEH} | Shut down | 1.0 | | | V |
| CE "Low" Voltage | V_{CEL} | Start up | | | 0.4 | V |
| Output noise | EN | $I_{OUT} = 40mA$, 300Hz~50kHz | | 50 | | uVrms |
| Ripple Rejection Rate | PSRR | $V_{IN} = [V_{OUT} + 1]V + 1Vp-pAC$ C | $I_{OUT} = 10mA$, 1kHZ | 70 | | dB |

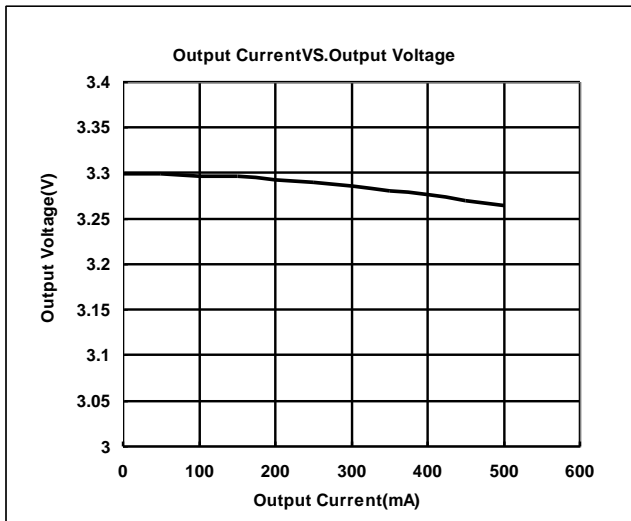
Note :

- $V_{OUT}(T)$: Specified Output Voltage
- $V_{OUT}(E)$: Effective Output Voltage (i.e. The output voltage when " $V_{OUT}(T) + 1.0V$ " is provided at the Vin pin while maintaining a certain Iout value.)
- V_{DIF} : $V_{IN1} - V_{OUT}(E)'$
 V_{IN1} : The input voltage when $V_{OUT}(E)'$ appears as input voltage is gradually decreased.
 $V_{OUT}(E)'$ = A voltage equal to 98% of the output voltage whenever an amply stabilized Iout { $V_{OUT}(T) + 1.0V$ } is input.

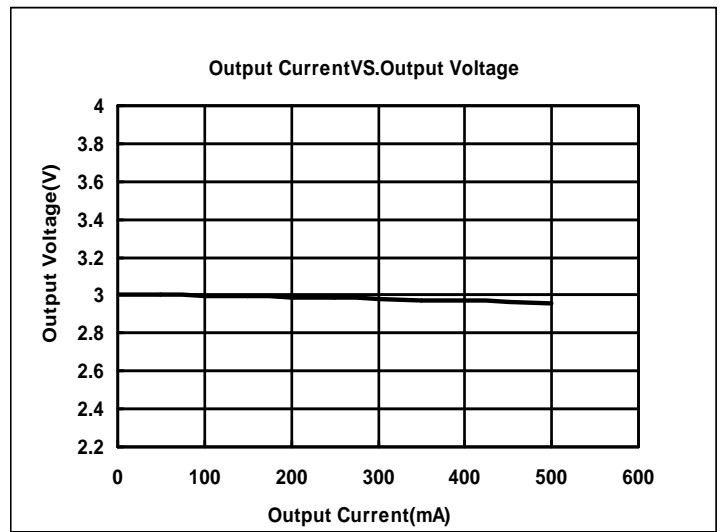
Type Characteristics

(1) Output Current VS. Output Voltage ($V_{IN}=V_{out}+1$, $T_a = 25^\circ\text{C}$)

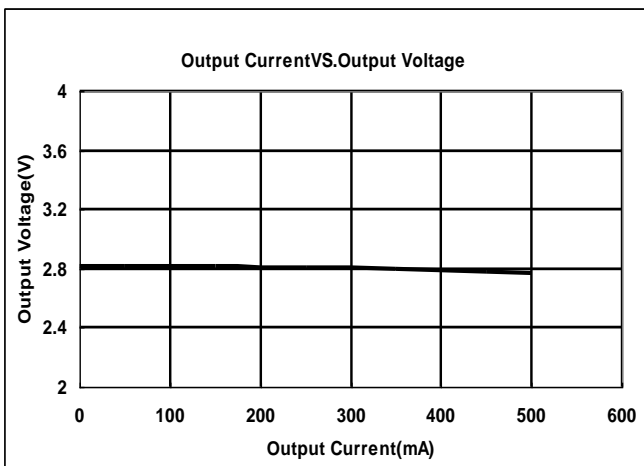
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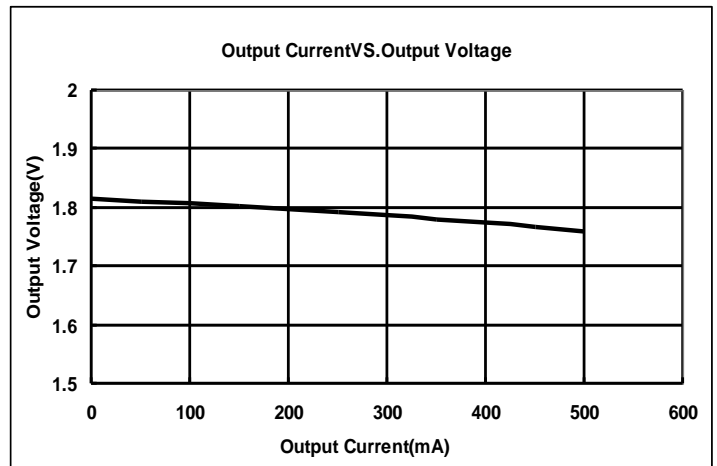
ME6211C30M5G



ME6211C28M5G

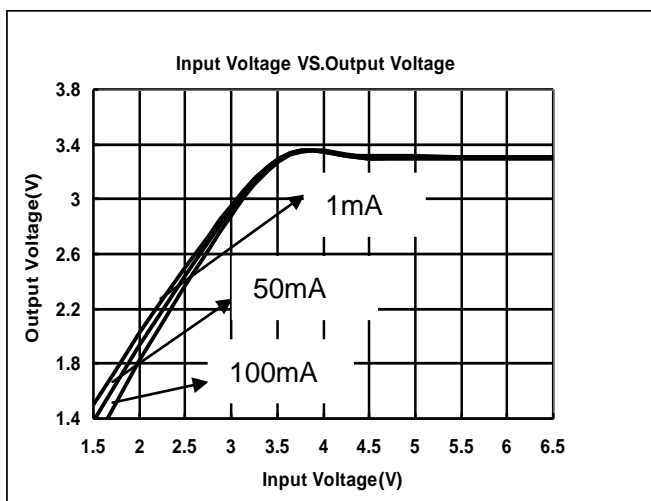


ME6211C18M5G

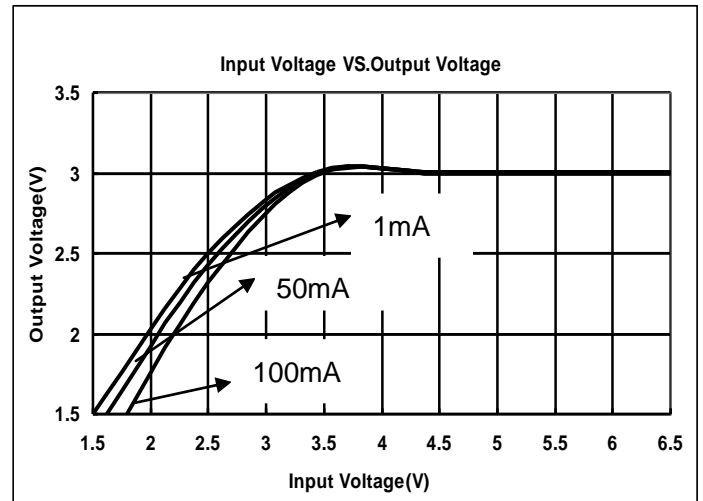


(2) Input Voltage VS. Output Voltage ($T_a = 25^\circ\text{C}$)

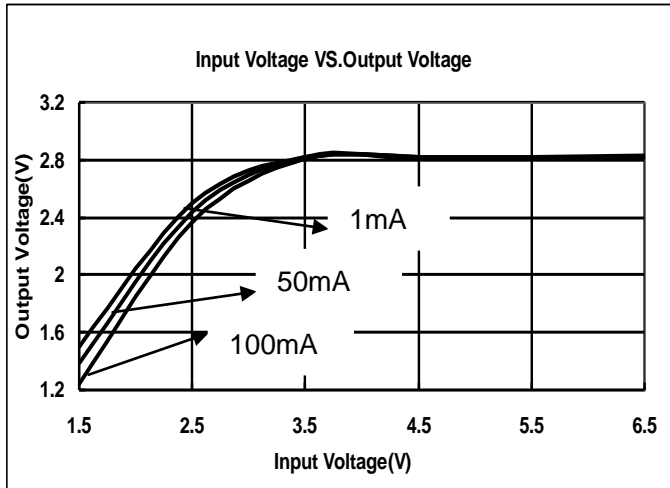
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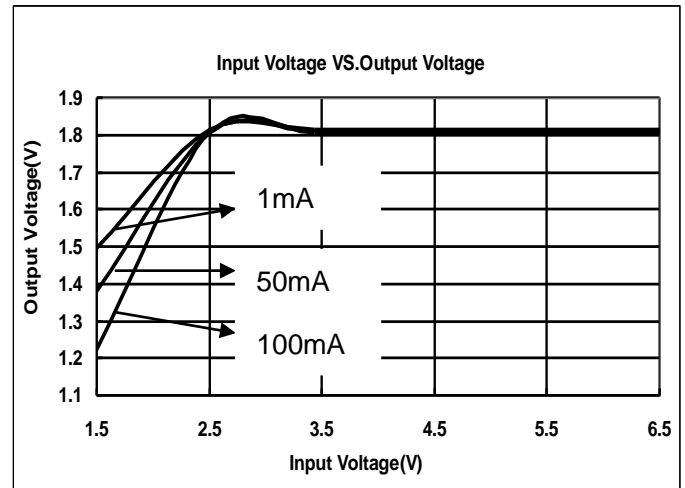
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ME6211C28M5G

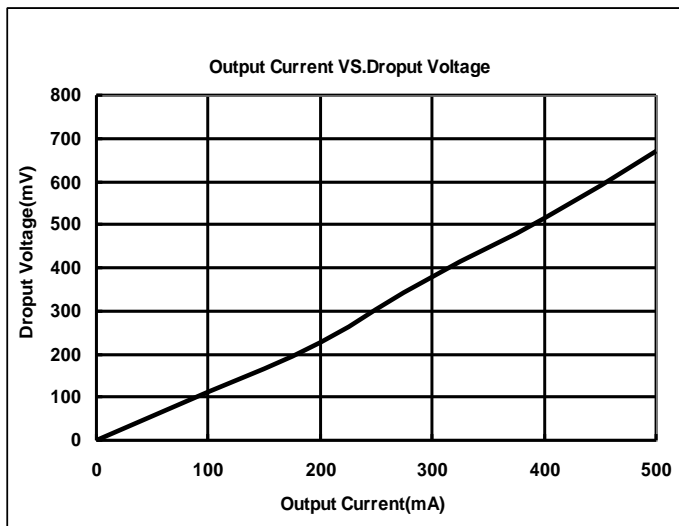


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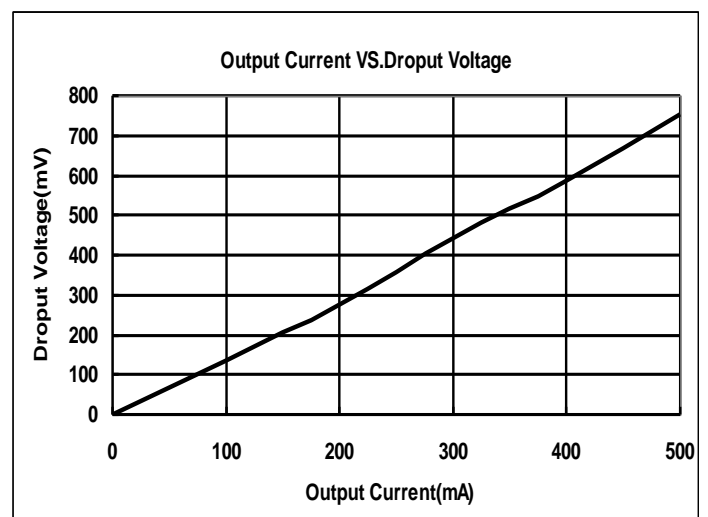


(3) Output Current VS. Dropout Voltage ($V_{IN}=V_{out}+1V, T_a = 25^\circ C$)

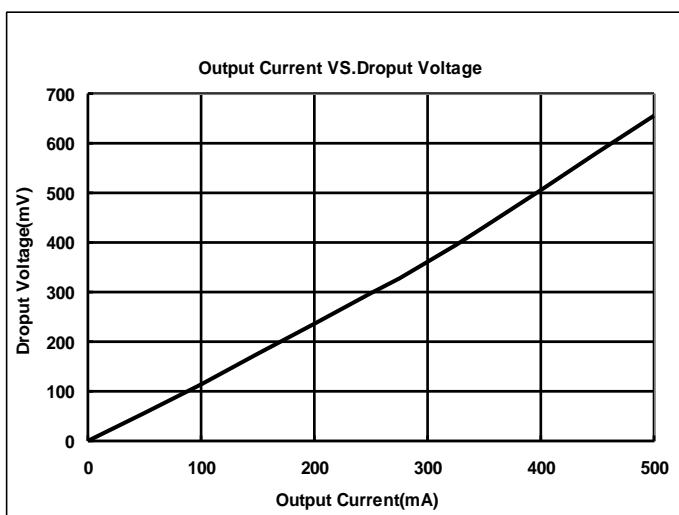
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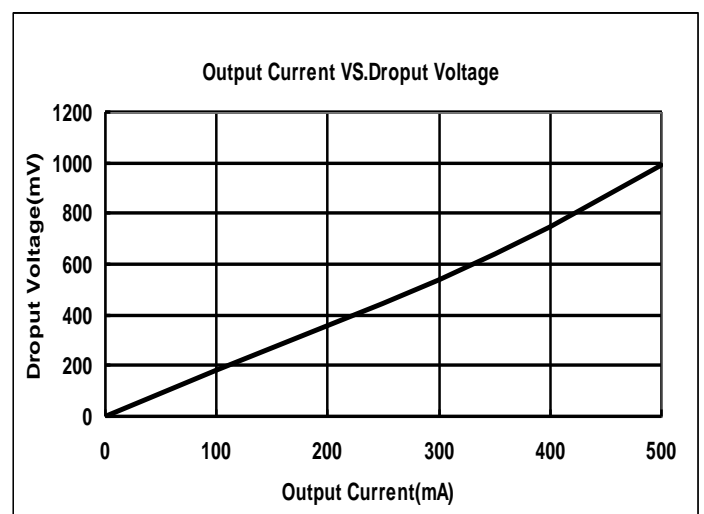
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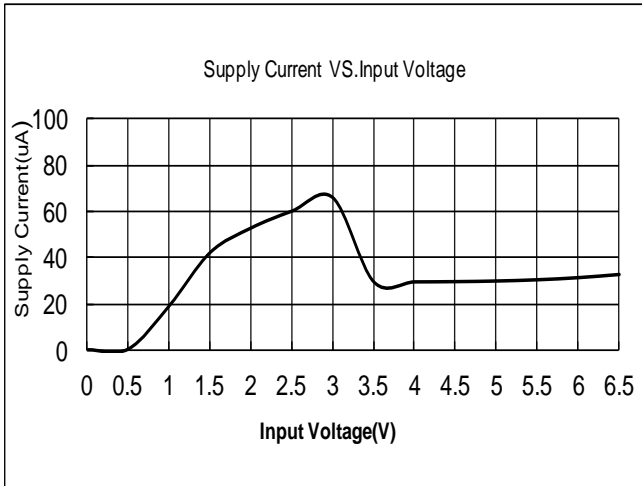


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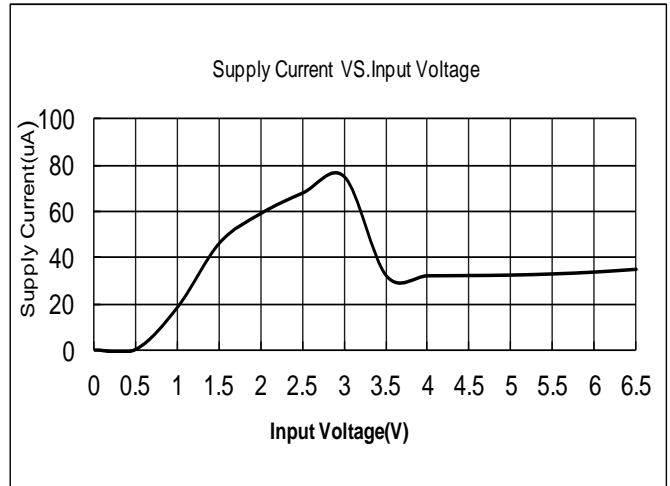


(4) Input Voltage VS. Supply Current (Ta = 25 °C)

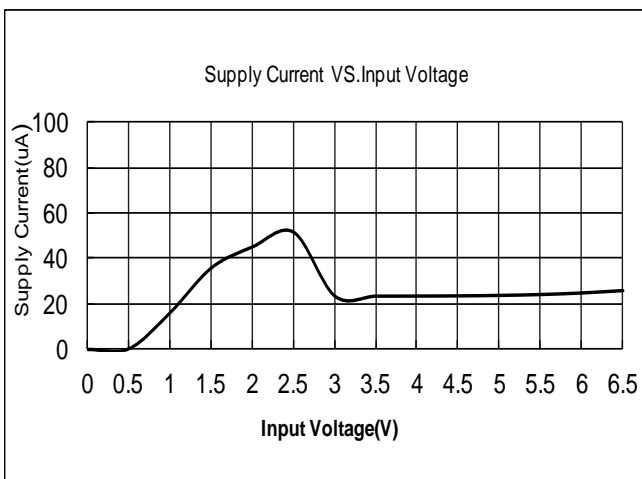
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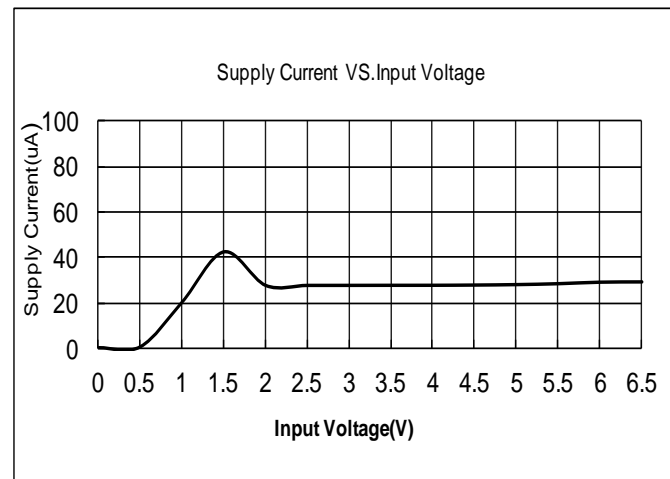
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ME6211C28M5G

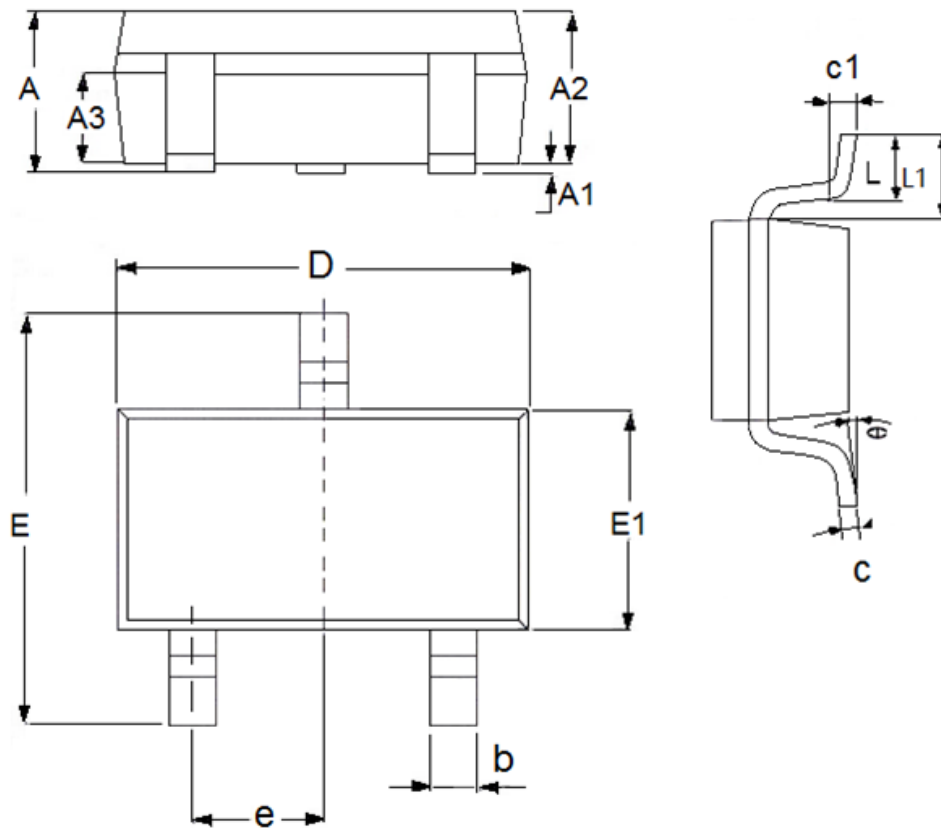


ME6211C18M5G



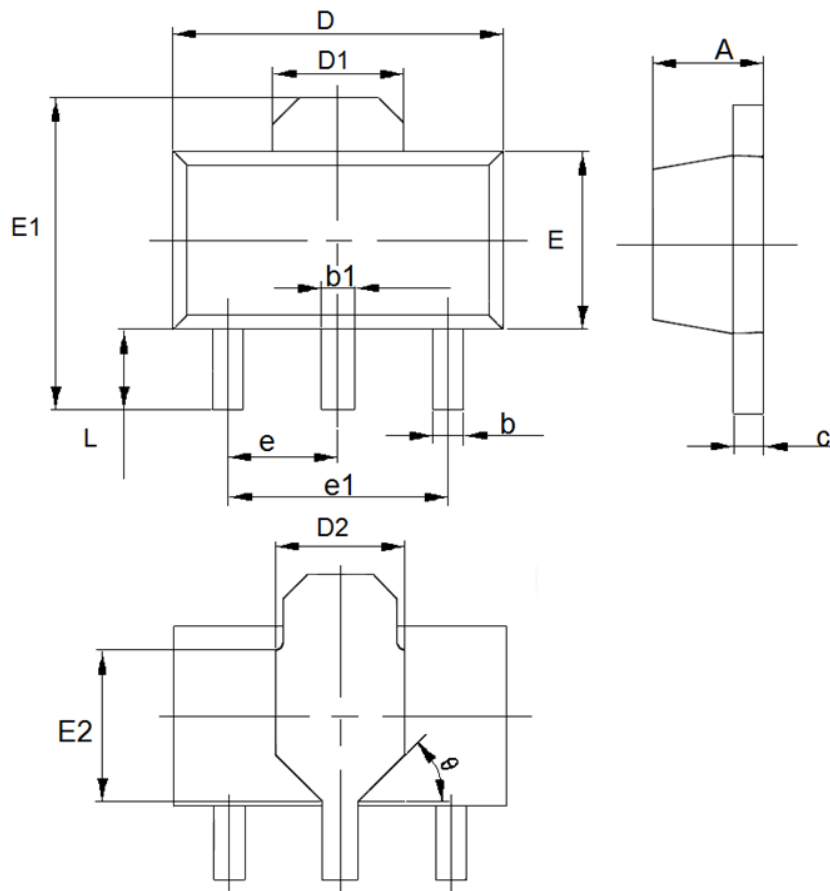
Packaging Information

● SOT23-3



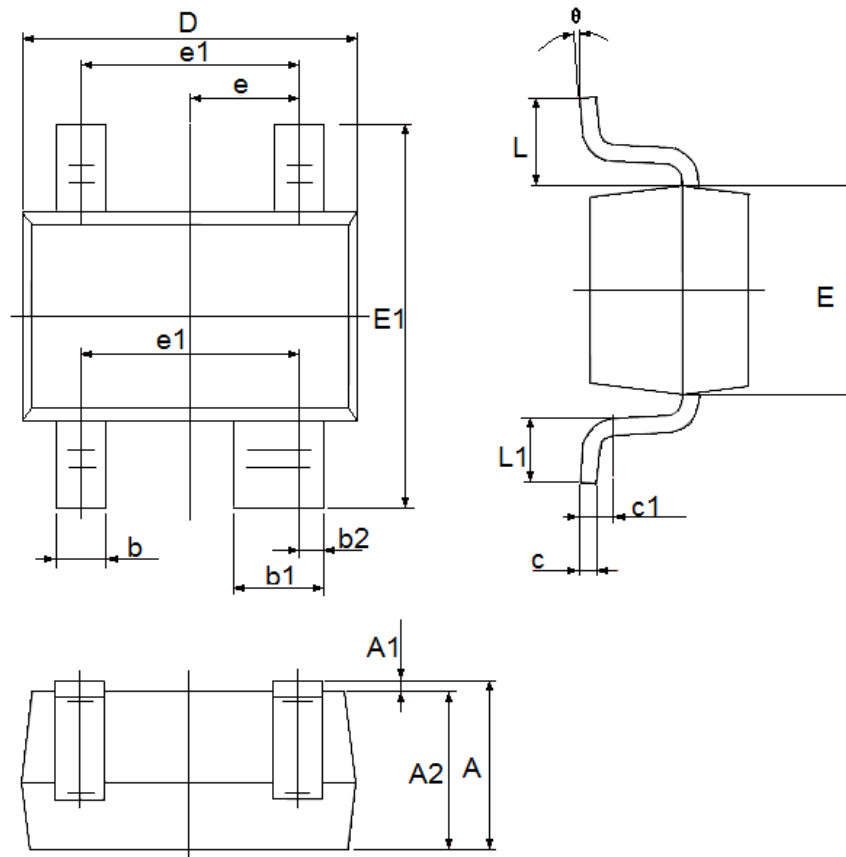
| DIM | Millimeters | | Inches | |
|-----|-------------|------|-------------|--------|
| | Min | Max | Min | Max |
| A | 1 | 1.5 | 0.0394 | 0.0591 |
| A1 | 0 | 0.15 | 0 | 0.0059 |
| A2 | 0.9 | 1.3 | 0.0354 | 0.0512 |
| A3 | 0.6 | 0.7 | 0.0236 | 0.0276 |
| b | 0.25 | 0.5 | 0.0098 | 0.0197 |
| c | 0.1 | 0.25 | 0.0039 | 0.0098 |
| D | 2.8 | 3.1 | 0.1102 | 0.122 |
| E | 2.6 | 3.1 | 0.1023 | 0.122 |
| E1 | 1.5 | 1.8 | 0.0591 | 0.0709 |
| e | 0.95(TYP) | | 0.0374(TYP) | |
| L | 0.25 | 0.6 | 0.0098 | 0.0236 |
| L1 | 0.59(TYP) | | 0.0232(TYP) | |
| θ | 0 | 8° | 0 | 8° |
| c1 | 0.2(TYP) | | 0.0079(TYP) | |

● SOT89-3



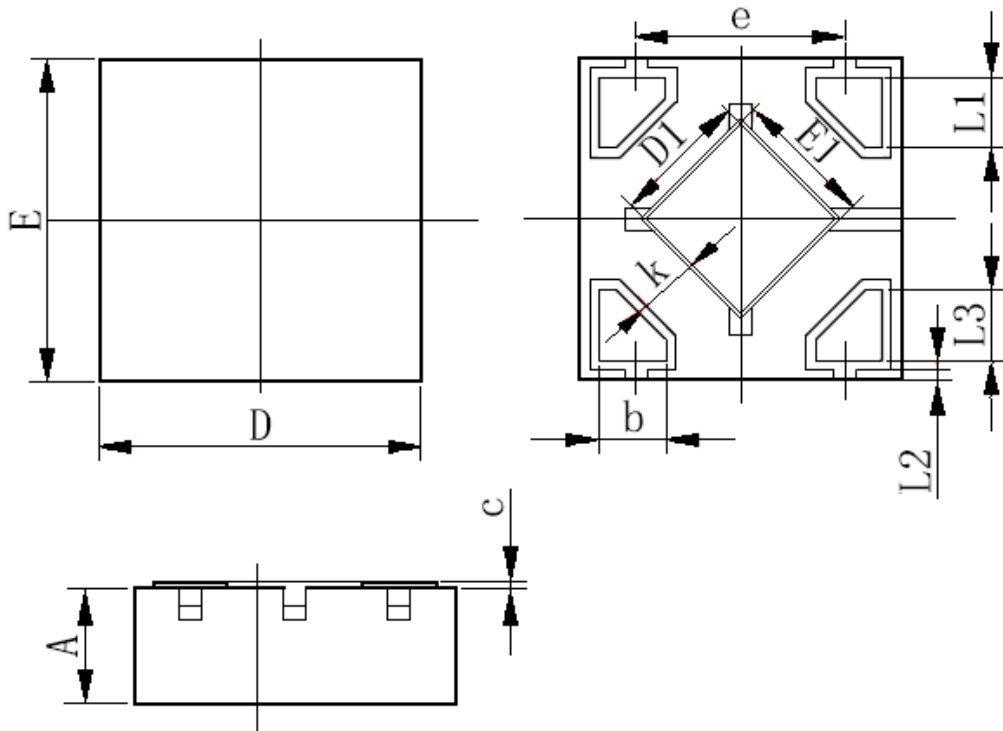
| DIM | Millimeters | | Inches | |
|-----|-------------|------|-------------|---------|
| | Min | Max | Min | Max |
| A | 1.4 | 1.6 | 0.0551 | 0.063 |
| b | 0.32 | 0.52 | 0.0126 | 0.0205 |
| b1 | 0.4 | 0.58 | 0.0157 | 0.0228 |
| c | 0.35 | 0.45 | 0.0138 | 0.01772 |
| D | 4.4 | 4.6 | 0.1732 | 0.1811 |
| D1 | 1.55(TYP) | | 0.061(TYP) | |
| D2 | 1.75(TYP) | | 0.0689(TYP) | |
| e1 | 3(TYP) | | 0.1181(TYP) | |
| E | 2.3 | 2.6 | 0.0906 | 0.1023 |
| E1 | 3.94 | 4.4 | 0.1551 | 0.1732 |
| E2 | 1.9(TYP) | | 0.0748(TYP) | |
| e | 1.5(TYP) | | 0.0591(TYP) | |
| L | 0.8 | 1.2 | 0.0315 | 0.0472 |
| θ | 45° | | 45° | |

● SOT343R



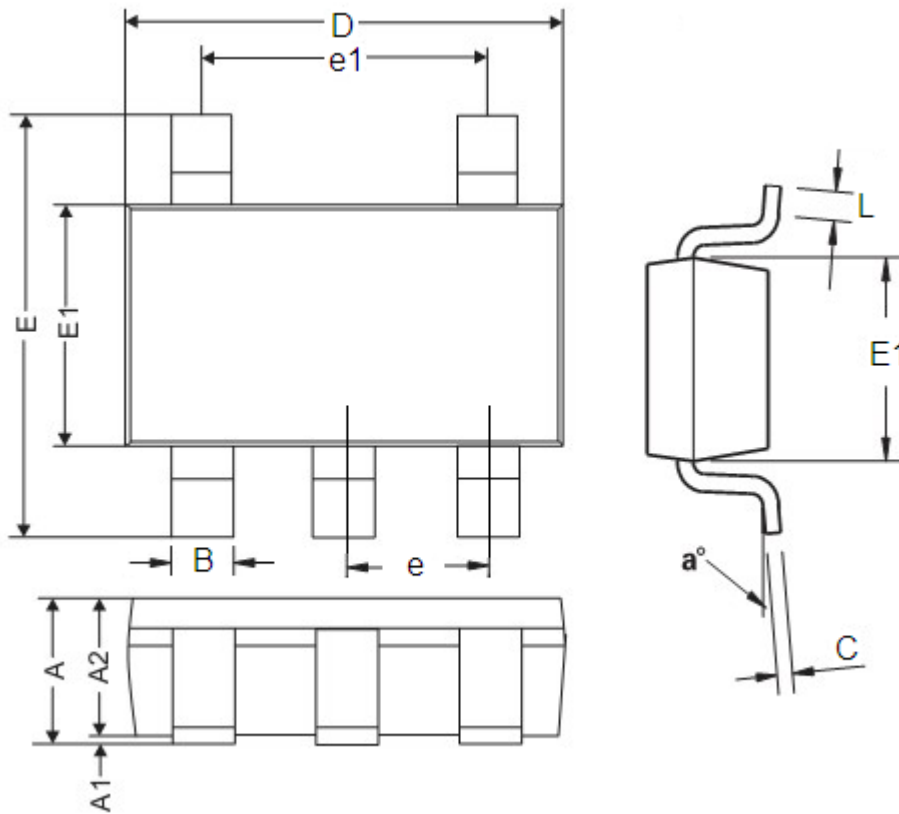
| DIM | Millimeters | | Inches | |
|----------|-------------|-------|----------|-------|
| | Min | Max | Min | Max |
| A | 0.900 | 1.100 | 0.035 | 0.043 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.000 | 0.035 | 0.039 |
| b | 0.150 | 0.350 | 0.006 | 0.014 |
| b1 | 0.350 | 0.500 | 0.014 | 0.020 |
| b2 | 0.075 | 0.175 | 0.003 | 0.007 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.000 | 2.200 | 0.079 | 0.087 |
| E | 1.100 | 1.400 | 0.043 | 0.055 |
| E1 | 2.100 | 2.500 | 0.083 | 0.098 |
| e | 0.65TYP | | 0.026TYP | |
| e1 | 1.200 | 1.400 | 0.047 | 0.055 |
| L | 0.525REF | | 0.021REF | |
| L1 | 0.260 | 0.460 | 0.010 | 0.018 |
| θ | 0° | 8° | 0° | 8° |
| c1 | 0.200 | | 0.008 | |

● FBP1*1-4L



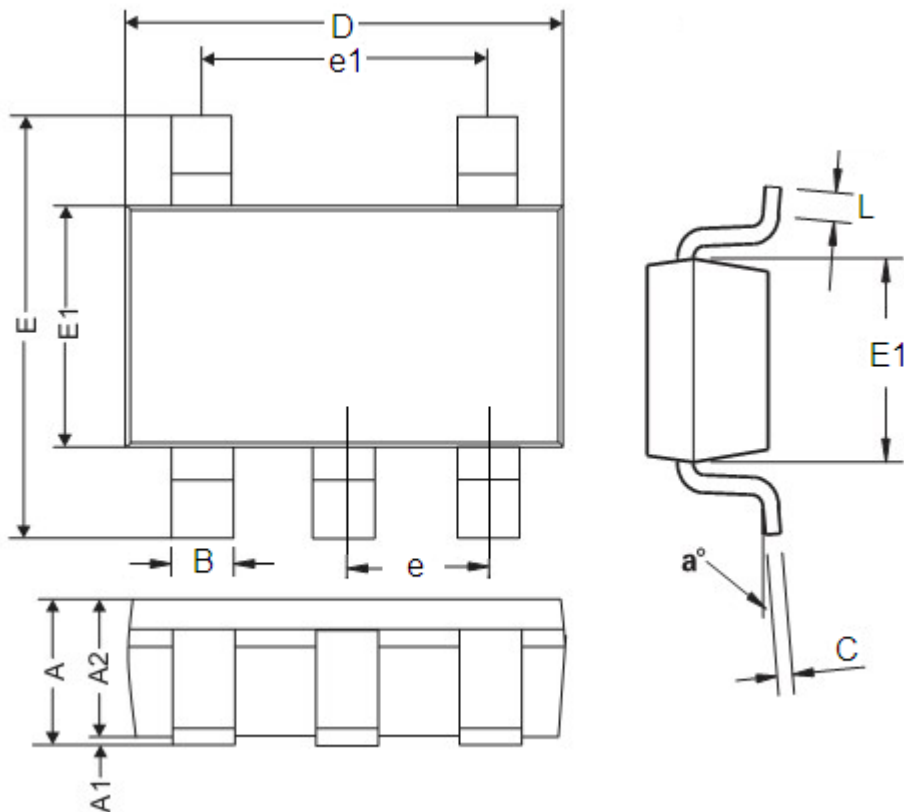
| DIM | Millimeters | | Inches | |
|-----|-------------|-------|----------|-------|
| | Min | Max | Min | Max |
| A | 0.330 | 0.410 | 0.013 | 0.016 |
| D | 0.950 | 1.100 | 0.037 | 0.043 |
| E | 0.950 | 1.100 | 0.037 | 0.043 |
| D1 | 0.370 | 0.470 | 0.015 | 0.019 |
| E1 | 0.370 | 0.470 | 0.015 | 0.019 |
| k | 0.170MIN | | 0.007MIN | |
| b | 0.160 | 0.260 | 0.060 | 0.010 |
| c | 0.010 | 0.090 | 0.000 | 0.004 |
| e | 0.600 | 0.700 | 0.024 | 0.028 |
| L1 | 0.185 | 0.255 | 0.007 | 0.010 |
| L2 | 0.030REF | | 0.001REF | |
| L3 | 0.185 | 0.255 | 0.007 | 0.010 |

● SOT23-5



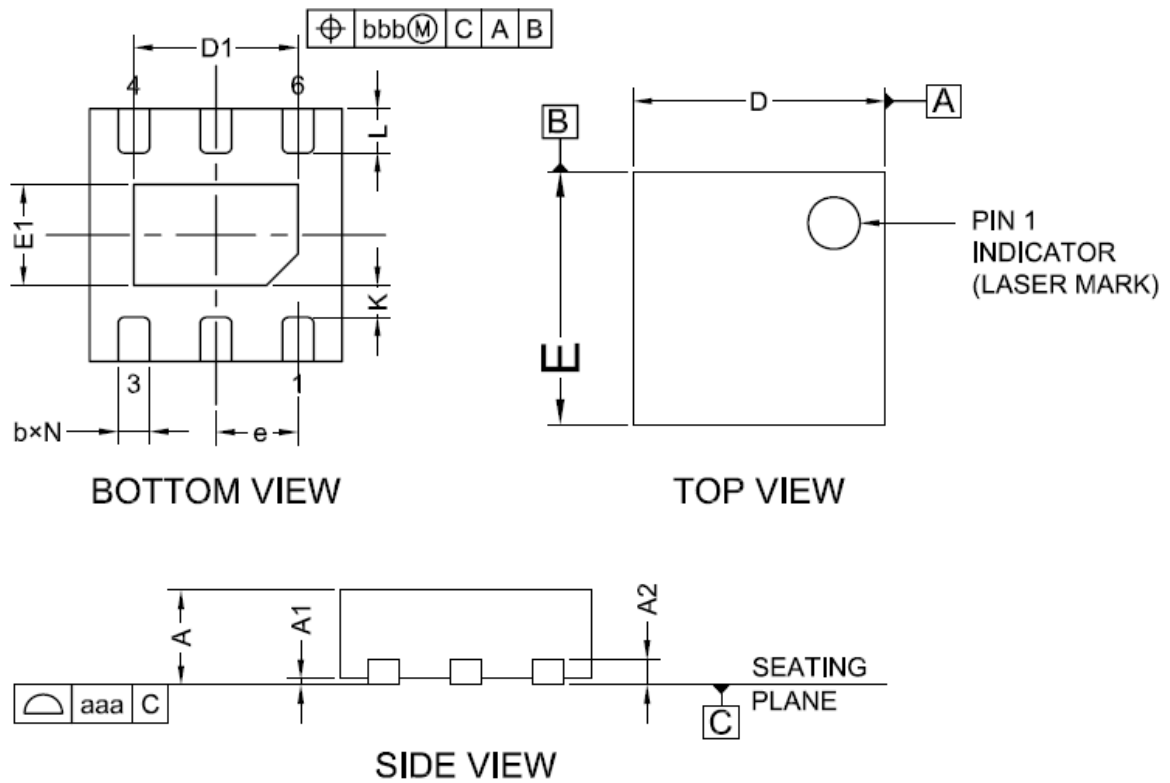
| DIM | Millimeters | | Inches | |
|-----|-------------|------|-----------|--------|
| | Min | Max | Min | Max |
| A | 1.05 | 1.45 | 0.0413 | 0.0570 |
| A1 | 0 | 0.15 | 0 | 0.0059 |
| A2 | 0.9 | 1.3 | 0.0354 | 0.0511 |
| B | 0.25 | 0.5 | 0.0098 | 0.0196 |
| C | 0.10 | 0.23 | 0.0039 | 0.0090 |
| D | 2.82 | 3.05 | 0.1110 | 0.1200 |
| E | 2.60 | 3.05 | 0.1023 | 0.1200 |
| E1 | 1.50 | 1.75 | 0.0590 | 0.0688 |
| e | 0.95REF | | 0.0374REF | |
| e1 | 1.90REF | | 0.0748REF | |
| L | 0.10 | 0.60 | 0.0039 | 0.0236 |
| a° | 0° | 30° | 0° | 30° |

● SOT353



| DIM | Millimeters | | Inches | |
|-----|-------------|------|-----------|-------|
| | Min | Max | Min | Max |
| A | 0.9 | 1.1 | 0.035 | 0.043 |
| A1 | 0.0 | 0.10 | 0.00 | 0.004 |
| A2 | 0.9 | 1.0 | 0.035 | 0.039 |
| B | 0.15 | 0.35 | 0.006 | 0.014 |
| C | 0.08 | 0.15 | 0.003 | 0.006 |
| D | 2.0 | 2.2 | 0.079 | 0.087 |
| E | 2.15 | 2.45 | 0.085 | 0.096 |
| E1 | 1.15 | 1.35 | 0.045 | 0.096 |
| e | 0.65 REF | | 0.026 REF | |
| e1 | 1.20 | 1.4 | 0.047 | 0.055 |
| L | 0.26 | 0.46 | 0.01 | 0.018 |
| a° | 0° | 8° | 0° | 8° |

● DFN2*2-6L



| DIM | Dimension (mm) | | |
|-----|----------------|------|------|
| | Min | Typ | Max |
| A | 0.70 | 0.75 | 0.80 |
| A1 | 0.00 | 0.02 | 0.05 |
| A2 | 0.203 REF | | |
| b | 0.20 | 0.25 | 0.30 |
| D | 1.95 | 2.00 | 2.05 |
| D1 | 1.20 | 1.30 | 1.40 |
| E | 1.95 | 2.00 | 2.05 |
| E1 | 0.70 | 0.80 | 0.90 |
| e | 0.65 REF | | |
| L | 0.30 | 0.35 | 0.40 |
| K | 0.20 min | | |
| N | 6 | | |
| aaa | 0.08 | | |
| bbb | 0.10 | | |

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[MC78M12CDTT5G](#) [L9468N](#)