



AF6219 Series

6V Input, 500mA, Good Transient Response Low Voltage, CMOS LDO

➤ Description

The AF6219 series are CMOS-based LDO regulators featuring 500mA output current. Internally, the IC consists of a voltage reference unit, an error amplifier and a current limit circuit. AF6219 also features an excellent line transient response, super high ripple rejection and low noise.

The series are very suitable for the battery-powered equipment such as RF applications and other systems requiring a quiet voltage source. Extends battery life in portable electronics.

➤ Applications

- Portable consumer equipment
- Wireless handsets, Smart Phones
- Bluetooth, Digital cameras and Digital audio
- PDAs and other handheld products

➤ Device Information

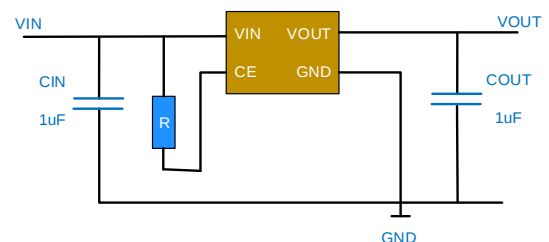
AF 6219/6219N – XX M/C/D

①	②	③	④
①	Standard		
②	Product Name AF6219: with OTP AF6219N: without OTP		
③	Output Voltage e.g. 33 = 3.3V		
④	M: SOT-23-3L Package		
	C: SOT-23-5L Package		
	D: DFN1010-4L Package		

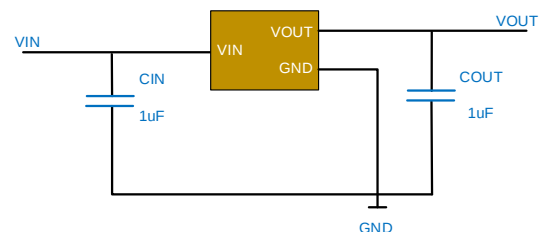
➤ Features

- Input Voltage Range: 2V~6V
- Output Voltage Range: 1.2V~5V
- Output Current: 500mA
- Quiescent Current: 50uA
- Dropout Voltage: 150mV@150mA
- Voltage Accuracy: $\pm 2\%$ (Typ.)
- PSRR: 75dB at 1kHz
- Excellent Line and Load Transient Response
- Short-Circuit Protection
- Built-in Current Limiter
- Low Output Noise
- Over-Temperature Protection

➤ Typical Application



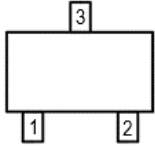
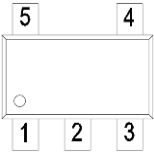
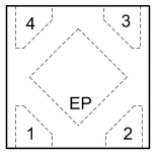
SOT-23-5L/DFN1010-4L



SOT-23-3L



➤ PIN Configuration

SYMBOL	Package Pin		
	SOT-23-3L	SOT-23-5L	DFN1010-4L
VIN	3	1	4
GND	1	2	2
CE		3	3
NC		4	
OUT	2	5	1
EP can connect GND or Float			
 SOT-23-3L  SOT-23-5L  DFN1010-4L			

➤ Absolute Maximum Ratings^① (Unless otherwise specified, T_A=25°C, all voltage are with respect to GND)

PARAMETER		SYMBOL	RATINGS	UNITS
Input Voltage		V _{IN}	-0.3~7	V
Output Voltage		V _{OUT}	-0.3~5	V
Output Current		I _{OUT}	500	mA
Power Dissipation	SOT-23-3L	P _D	0.4	W
	SOT-23-5L			
	DFN1010-4L			
Operating Junction Temperature Range		T _J	-40~125	°C
Storage Temperature		T _{STG}	-40~125	°C
Lead Temperature (Soldering, 10 sec)		T _L	260	°C
Package Thermal Resistance	SOT23-5	θ _{JA}	250	°C/W
	DFN1X1-4L			
	SOT23-3L			

①. Stresses beyond those listed under absolute maximum ratings may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under recommended operating conditions is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.



AF6219 Series

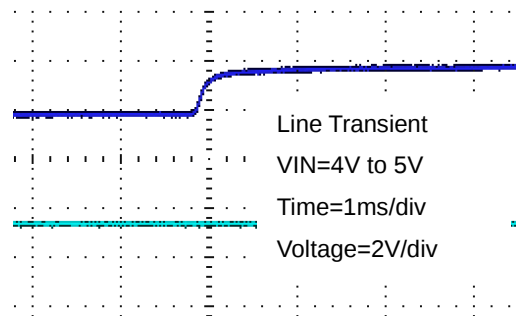
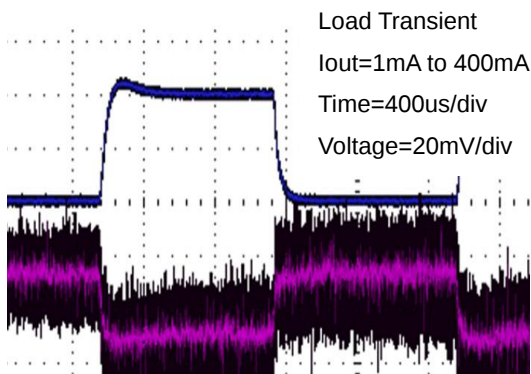
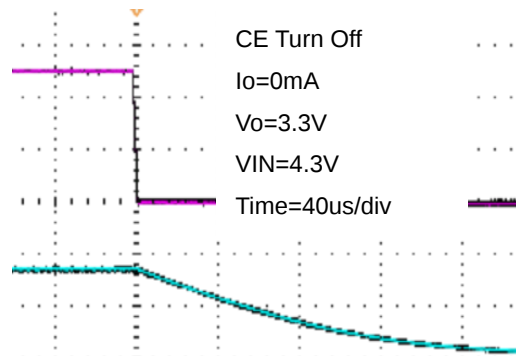
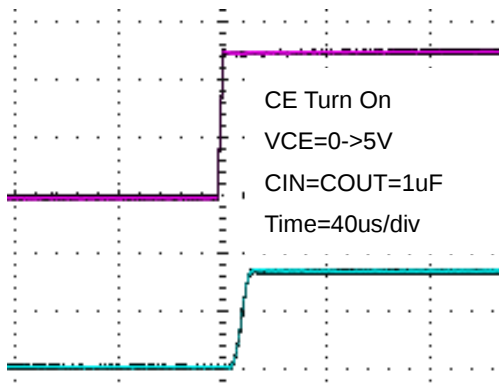
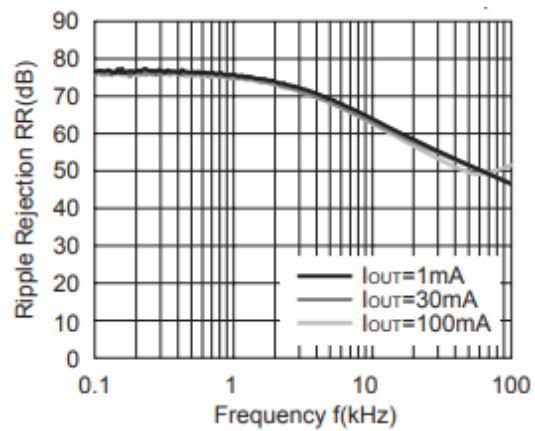
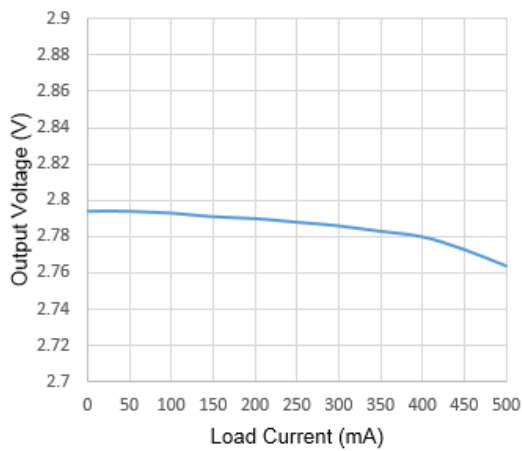
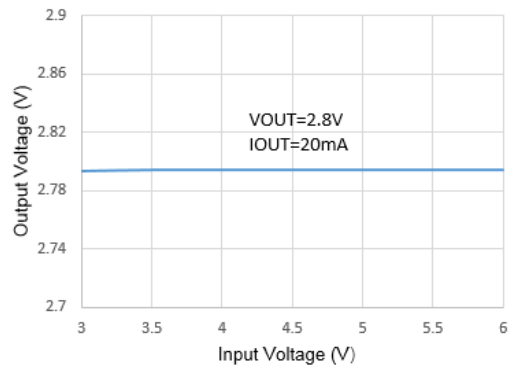
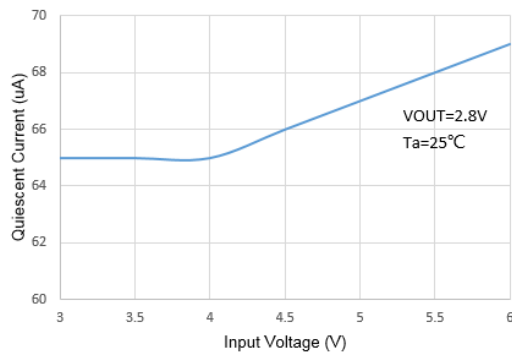
- **Electronics Characteristics (Unless otherwise specified, $T_A=25^{\circ}\text{C}$, $V_{IN}=V_{OUT}+1\text{V}$, $C_{IN}=C_{OUT}=1\mu\text{F}$)**

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	V_{IN}		2		6	V
Output Voltage	V_{OUT}		0.98 V_{OUT}	V_{OUT}	1.02 V_{OUT}	V
Dropout Voltage	V_{DIF}	$I_{OUT}=150\text{mA}$ $V_{OUT}=1.2\text{V}$		390	420	mV
		$I_{OUT}=150\text{mA}$ $V_{OUT}=1.5\text{V}$		280	300	mV
		$I_{OUT}=150\text{mA}$ $V_{OUT}=1.8\text{V}$		220	250	mV
		$I_{OUT}=150\text{mA}$ $V_{OUT}=2.5\text{V}$		175	220	mV
		$I_{OUT}=150\text{mA}$ $V_{OUT}\geq 2.8\text{V}$		150	220	mV
Quiescent Current	I_Q	$I_{OUT}=0$		50	100	μA
Shutdown current	I_{CEL}	$V_{CE}=V_{SS}$		0.1	1	μA
Line Regulation	ΔV_{LINE}	$I_{OUT}=10\text{mA}$ $V_{OUT}+1\text{V}\leq V_{IN}\leq 6\text{V}$		0.01	0.2	%/V
Load Regulation	ΔV_{LOAD}	$V_{IN}=V_{OUT}+1\text{V}$ $1\text{mA}\leq I_{OUT}\leq 100\text{mA}$		10		mV
Temperature Coefficient	TC	$I_{OUT}=10\text{mA}$ $-40^{\circ}\text{C}<T_A<125^{\circ}\text{C}$		50		ppm
Short Current	I_{SHORT}	$V_{OUT}=V_{SS}$		100		mA
Power Supply Rejection Ratio	PSRR	$I_{OUT}=5\text{mA}$	1kHz	75		dB
			10kHz	70		
CE "High"	$V_{CE}^{\text{"H"}}$		1.5		V_{IN}	V
CE "Low"	$V_{CE}^{\text{"L"}}$				0.4	V
Output Noise		10Hz~100kHz		40		μVRMS
Discharge Resistance	$R_{DISCHRG}$	$V_{IN}=4.3\text{V}$ $V_{CE}=0\text{V}$		40		Ω
Thermal Shutdown Temperature	TSD			150		$^{\circ}\text{C}$
Thermal Shutdown Hysteresis	ΔTSD			20		$^{\circ}\text{C}$



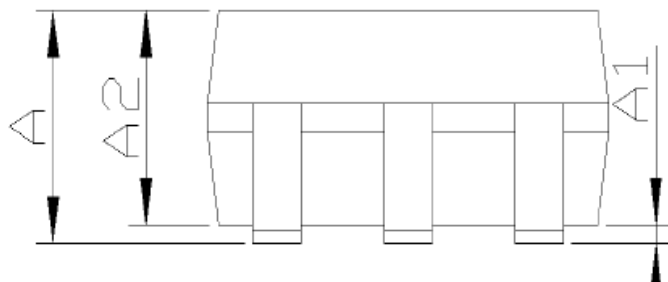
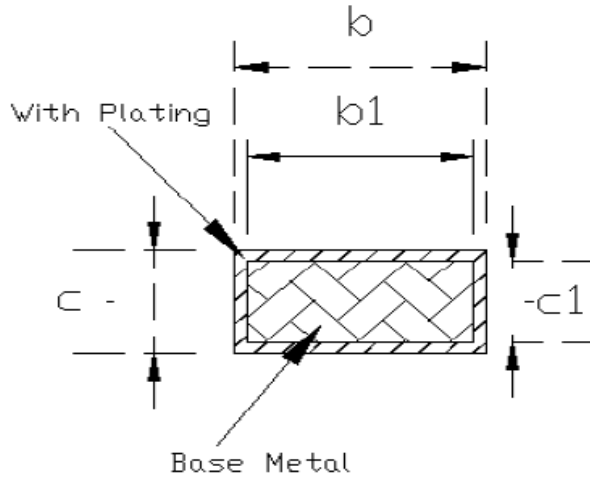
AF6219 Series

- Typical Characteristics (Unless otherwise specified, $T_A=25^\circ\text{C}$, $V_{IN}=V_{OUT}+1\text{V}$, $C_{IN}=C_{OUT}=1\mu\text{F}$)

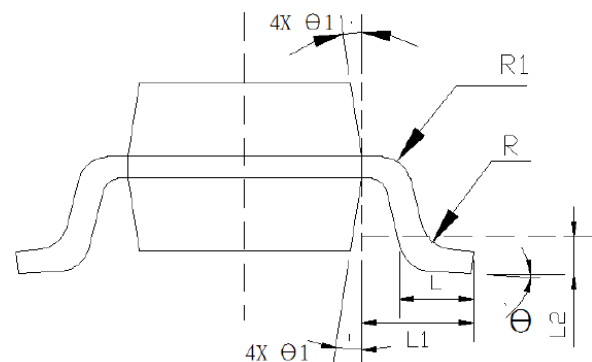
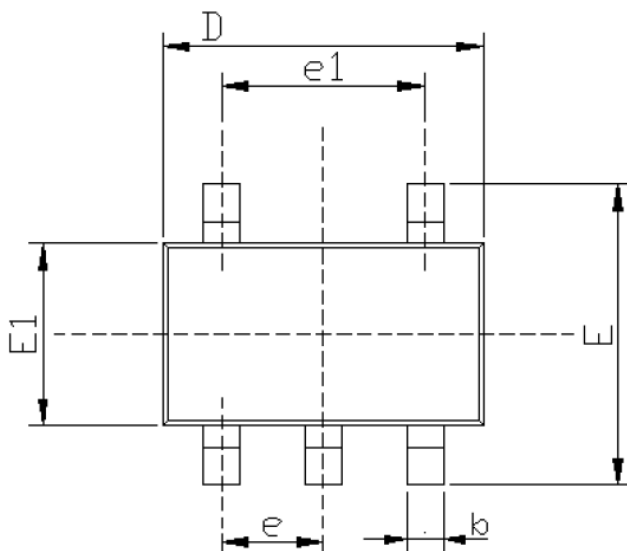


➤ Package Information

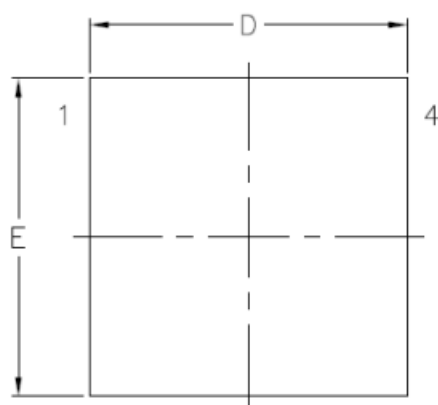
SOT-23-5L



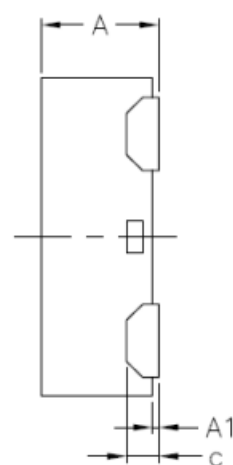
Common Dimensions (Units of Measure=Millimeter)			
SYMBOL	MINIMUM	NOMINAL	MAXIMUM
A	-	-	1.35
A1	0	-	0.15
A2	1.00	1.10	1.20
b	0.35	-	0.45
b1	0.32	-	0.38
c	0.14	-	0.20
c1	0.14	0.15	0.16
D	2.82	2.92	3.02
E	2.60	2.80	3.00
E1	1.526	1.626	1.726
e	0.90	0.95	1.00
e1	1.80	1.90	2.00
L	0.35	0.45	0.60
L1	0.6 REF		
L2	0.25 REF		
R	0.10	-	-
R1	0.10	-	0.25
θ	0°	4°	8°
θ 1	5°	10°	15°



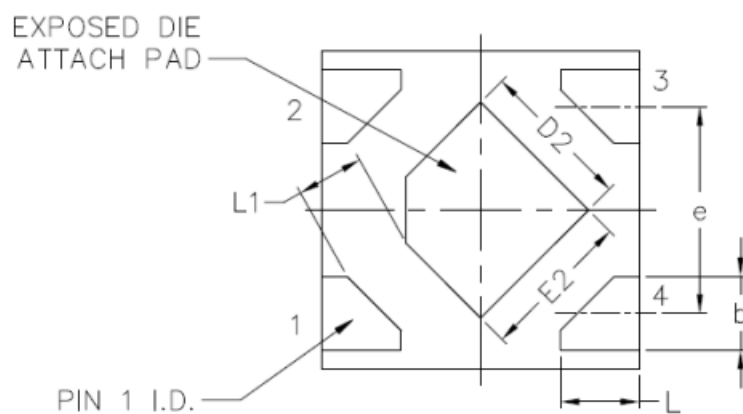
DFN1010-4L



TOP VIEW



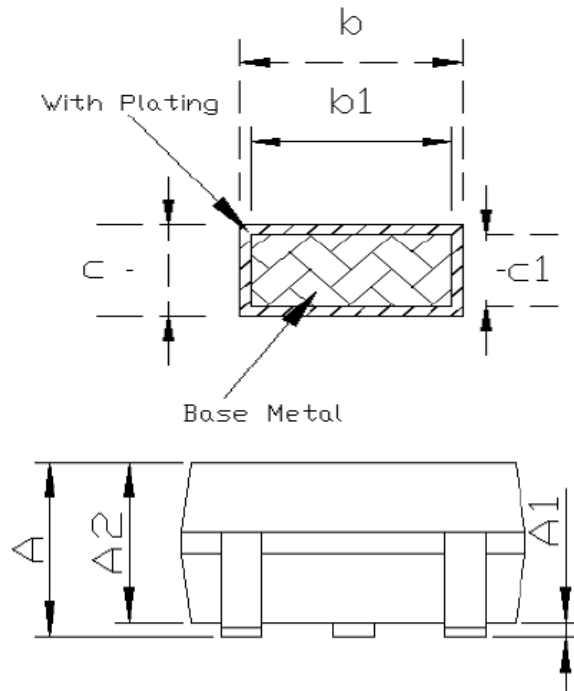
SIDE VIEW



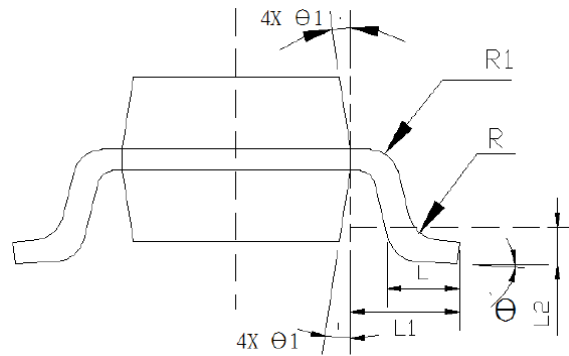
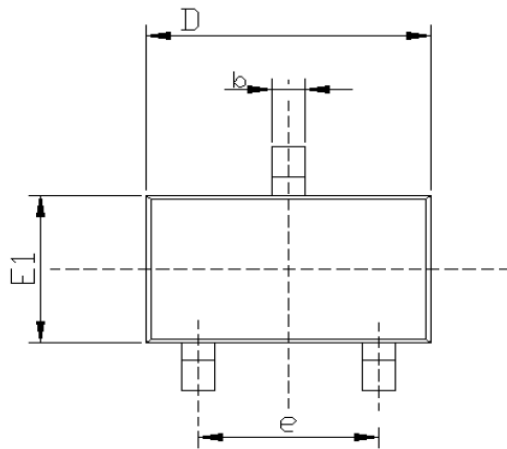
BOTTOM VIEW

尺寸 标注	最小 (mm)	标准 (mm)	最大 (mm)	尺寸 标注	最小 (mm)	标准 (mm)	最大 (mm)
A	0.32	0.37	0.41	e	0.65 BSC		
A1	0.00	0.02	0.05	E	0.95	1.00	1.05
b	0.18	0.23	0.28	E2	0.43	0.48	0.53
c	0.102 REF			L	0.20	0.25	0.30
D	0.95	1.00	1.05	L1	0.205 REF		
D2	0.43	0.48	0.53				

SOT-23-3L

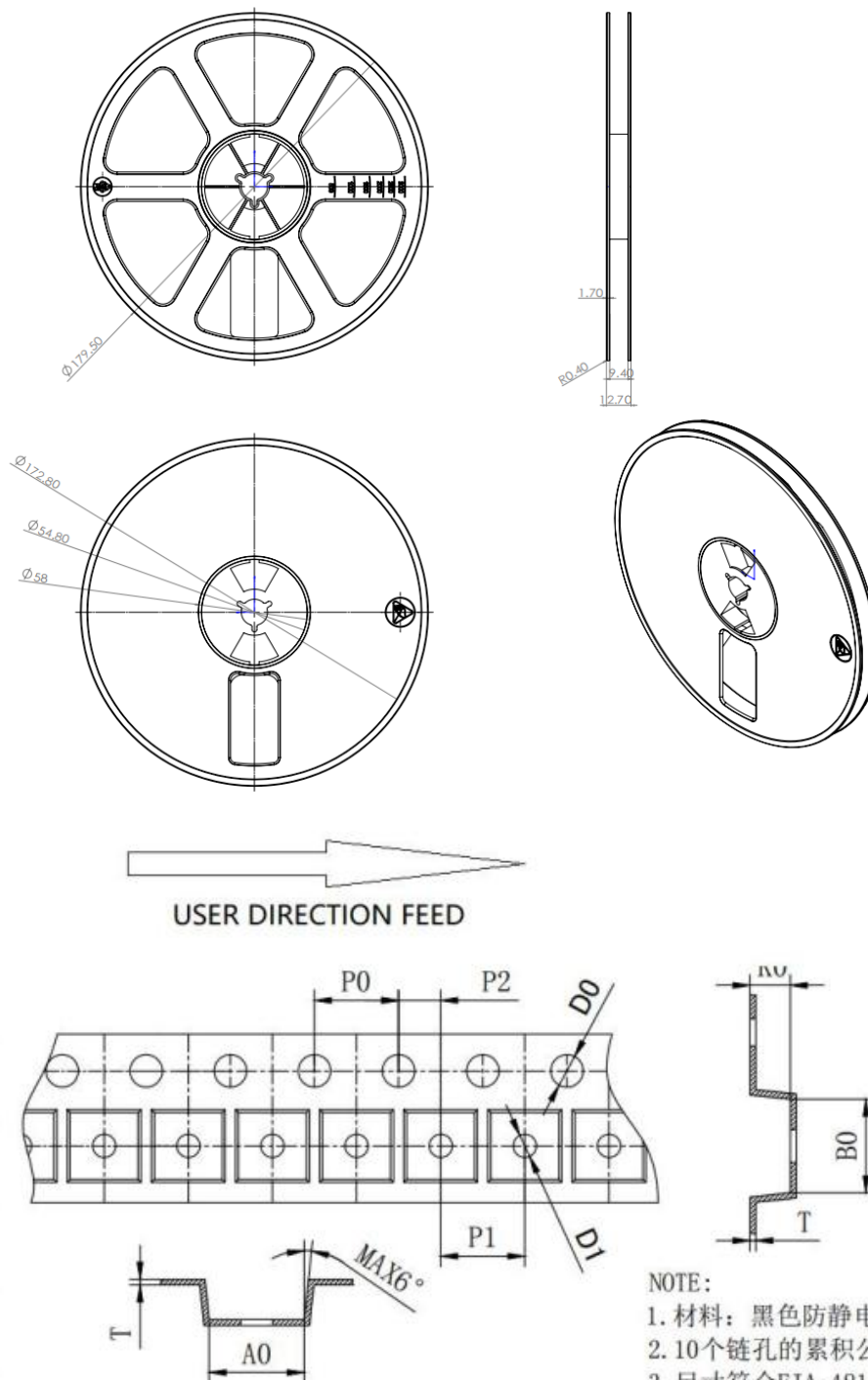


Common Dimensions (Units of Measure=Millimeter)			
SYMBOL	MINIMUM	NOMINAL	MAXIMUM
A	-	-	1.35
A1	0	-	0.15
A2	1.00	1.10	1.20
b	0.35	-	0.45
b1	0.32	-	0.38
c	0.14	-	0.20
c1	0.14	0.15	0.16
D	2.82	2.92	3.02
E	2.60	2.80	3.00
E1	1.526	1.626	1.726
e	0.90	0.95	1.00
e1	1.80	1.90	2.00
L	0.35	0.45	0.60
L1	0.6 REF		
L2	0.25 REF		
R	0.10	-	-
R1	0.10	-	0.25
θ	0°	4°	8°
θ 1	5°	10°	15°



➤ Tape and Reel

SOT-23-5L



NOTE:

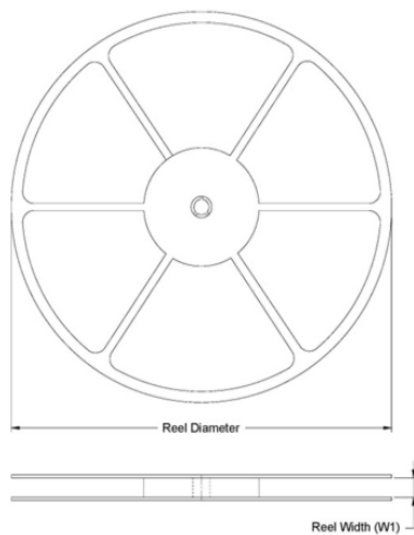
1. 材料：黑色防静电材料；
2. 10个链孔的累积公差不能超过 ± 0.2 ；
3. 尺寸符合EIA-481-E的要求。

SYMBOL	A0	B0	K0	P0	P1	P2
SPEC	3.30 ± 0.10	3.20 ± 0.10	1.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05
SYMBOL	T	E	F	D0	D1	W
SPEC	0.20 ± 0.05	1.75 ± 0.10	3.50 ± 0.05	1.55 ± 0.05	1.10 ± 0.10	8.00 ± 0.1

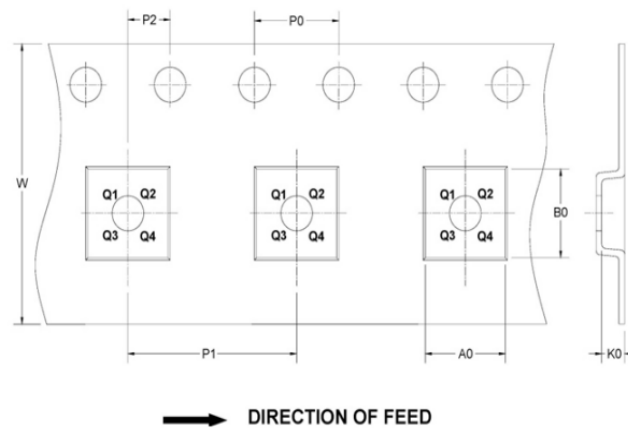
DFN1010-4L

TAPE AND REEL INFORMATION

REEL DIMENSIONS



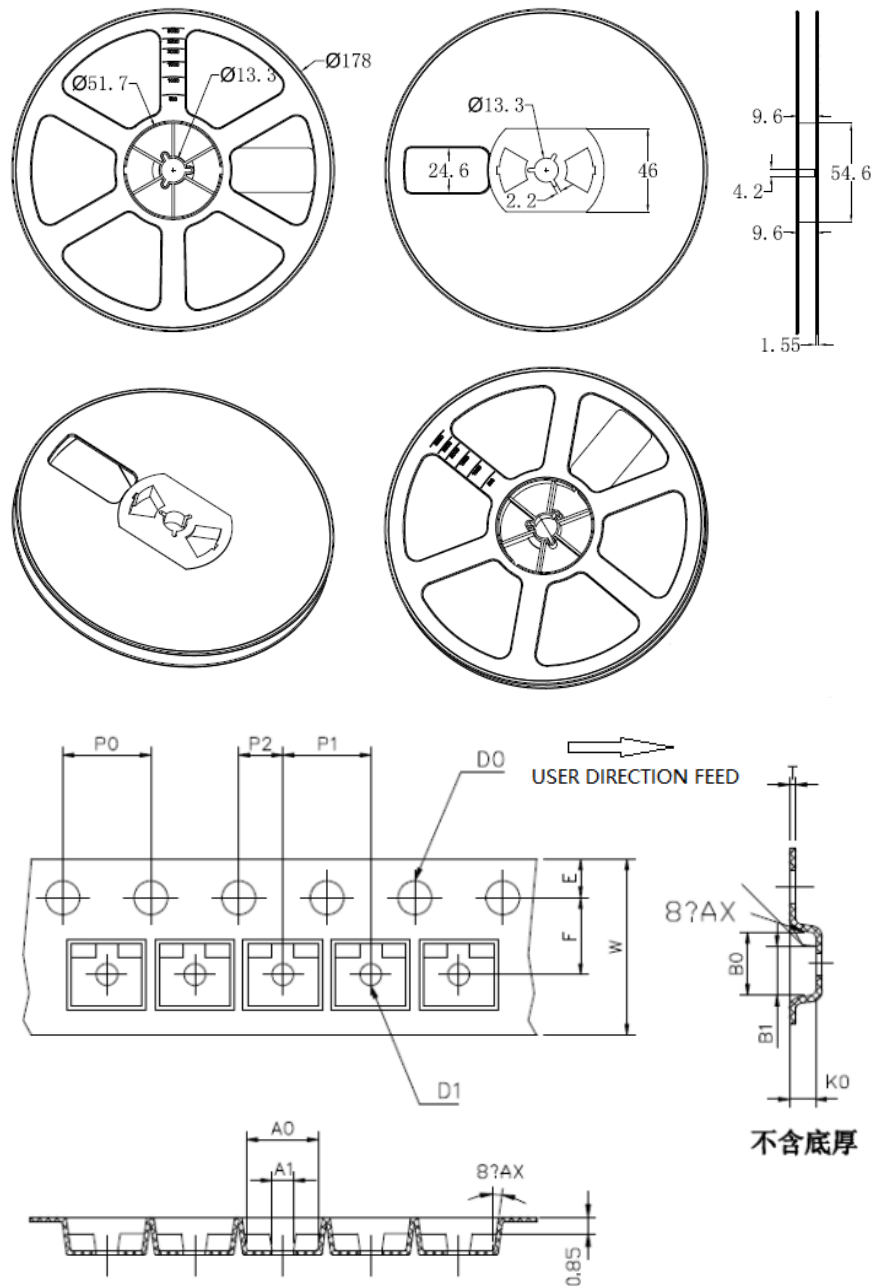
TAPE DIMENSIONS



KEY PARAMETER LIST OF TAPE AND REEL

Device Name	Package Type	Reel Diameter	Unit: mm								Pin 1 Quadrant	Reel Q'ty
			Reel Width W1	A0	B0	K0	P0	P1	P2	W		
AF6219	DFN1*1	178	8	1.25	1.25	0.57	4	2	2	8	Q1	10000

SOT-23-3L



Symbol	A0	A1	B0	B1	K0	D ₀	D ₁	P ₀	P ₁
Spec	3.15±0.10	1.15±0.10	2.80±0.10	2.15±0.10	1.30±0.10	1.55±0.10	1.10±0.10	4.00±0.10	4.00±0.10
Symbol	W	E	F	P ₂	t	t1	10*P0	4-P0	
Spec	7.95±0.05	1.70±0.05	3.50±0.10	2.00±0.10	0.21±0.02	0.05以上	40.00±0.10	4.00±0.10	

NOTE:

- 1.材料: PC+PS导电
- 2.10个链孔的累积公差不能超过0.2MM;
- 3.250MM带子的扇形不得超过1MM;
- 4.按照EIA-481-D的要求。



AF6219 Series

➤ Order Information

AF6219-XXC/M/D series

V _{OUT} (V)	DFN1010-4L			SOT-23-5L		
	Device	Marking	Shipping	Device	Marking	Shipping
1.2	AF6219-12D	1v2	Tape and Reel, 3K	AF6219-12C	1912	Tape and Reel, 3K
1.5	AF6219-15D	1v5		AF6219-15C	1915	
1.8	AF6219-18D	1v8		AF6219-18C	1918	
2.5	AF6219-25D	2v5		AF6219-25C	1925	
2.8	AF6219-28D	2v8		AF6219-28C	1928	
3.0	AF6219-30D	3v0		AF6219-30C	1930	
3.3	AF6219-33D	3v3		AF6219-33C	1933	
5.0	AF6219-50D	5v0		-	-	
V _{OUT} (V)	SOT-23-3L					
	Device	Marking	Shipping			
1.8	AF6219-18M	1918	Tape and Reel, 3K			
2.5	AF6219-25M	1925				
2.8	AF6219-28M	1928				
3.0	AF6219-30M	1930				
3.3	AF6219-33M	1933				

AF6219N-XXC/M series

V _{OUT} (V)	SOT-23-5L			SOT-23-3L		
	Device	Marking	Shipping	Device	Marking	Shipping
1.2	AF6219N-12C	19N12	Tape and Reel, 3K	-	-	Tape and Reel, 3K
1.5	AF6219N-15C	19N15		-	-	
1.8	AF6219N-18C	19N18		-	-	
2.5	AF6219N-25C	19N25		-	-	
2.8	AF6219N-28C	19N28		-	-	
3.3	AF6219N-33C	19N33		AF6219N-33M	19N33	
3.6	-	-		AF6219N-36M	19N36	



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