SK6216C 15V, 500mA, Low Power Consumption LDO

Description

The SK6216C series is a group of positive voltage output, three-pin regulators, it provide a high current even when the input/output voltage differential is small. Low power consumption and high accuracy is achieved through CMOS and laser trimming technologies.

The SK6216C consists of a high-precision voltage reference, an error amplification circuit, and a current limited output driver. Load Transient response has improved in comparison to the existing series.

SOT89,SOT23-3 and SOT23-5 packages are available.

Features

- Low voltage drop: 0.26V@100mA&VOUT=3.3V
- High input voltage: 15V
- Low temperature coefficient
- Large Output Current: 500mA
- Low Quiescent Current: 2.0uA
- Output voltage accuracy: tolerance ±2%
- Built-in current limiter
- SOT89,SOT23-3 and SOT23-5 packages

Applications

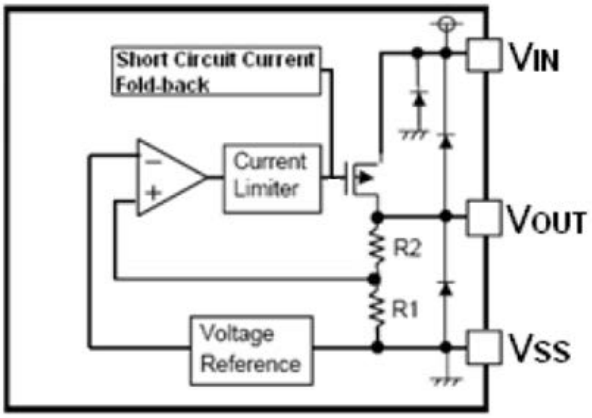
- Battery-powered equipment
- Hand-Hold Equipment
- GPS Receivers
- Wireless LAN

Ordering Information

Order Number	Package	Temperature	RoHS	Shipping Type
SK6216CMMR-XX	SOT23-3	–40°C to +85°C	YES	3000PCS/REEL
SK6216CMM5R-XX	SOT23-5	–40°C to +85°C	YES	3000PCS/REEL
SK6216CMPR-XX	SOT89	–40°C to +85°C	YES	1000PCS/REEL

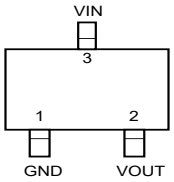
Note:"XX" stands for output voltages.

Block Diagram



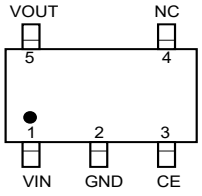
Pin Assignment

SOT23-3 (Top View)



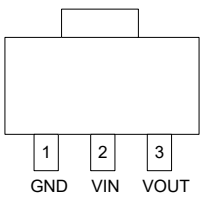
PIN NO.	PIN NAME	FUNCTION
1	GND	GND pin
2	VOUT	Output voltage pin
3	VIN	Input voltage pin

SOT23-5 (Top View)



PIN NO.	PIN NAME	FUNCTION
1	VIN	Input voltage pin
2	GND	GND pin
3	CE	Enable pin
4	NC	--
5	VOUT	Output voltage pin

SOT89 (Top View)



PIN NO.	PIN NAME	FUNCTION
1	GND	GND pin
2	VIN	Input voltage pin
3	VOUT	Output voltage pin

Absolute Maximum Ratings

Supply Voltage .....3.5V to 18V

Storage Temperature .....-40℃ to 125℃

Operating Temperature .....-40℃ to 85℃

Note: These are stress ratings only. Stresses exceeding the range specified under "Absolute Maximum Ratings" may cause substantial damage to the device. Functional operation of this device at other conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.

Electrical Characteristics

SK6216C for any output voltage

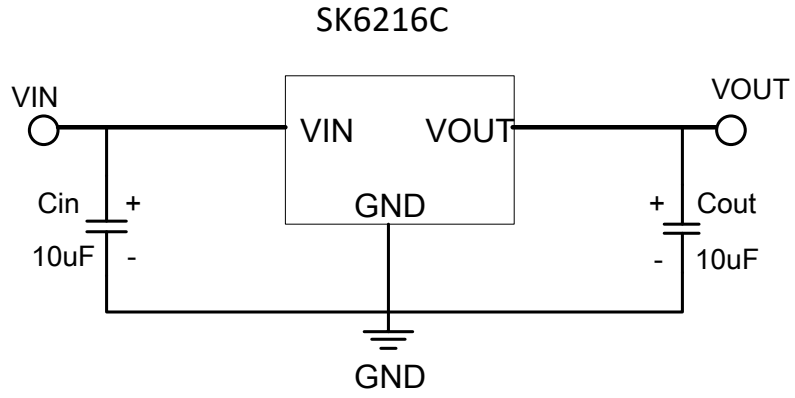
（Ta=25℃）

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	Vout	Vin=Vout+1V 1.0mA≤Iout≤30mA	Vout×0.98	--	Vout×1.02	V
Output Current*1	Iout	Vin-Vout=1.5V	--	500	--	mA
Low dropout*2	V_{drop}	Refer to the next table				
Line Regulation	$\frac{DV_{OUT}}{DV_{IN}\,´\,V_{OUT}}$	4.3V≤Vin≤8V Iout=100mA	--	0.75	0.9	%/V
Load Regulation	△Vout	Vin= Vout+1V 1.0mA≤Iout≤100mA	--	12	30	mV
Output voltage Temperature Coefficiency	$\frac{DV_{OUT}}{DTa}$	Iout=30mA 0℃≤Ta≤70℃	--	±100	--	Ppm/℃
PSRR	PSRR	F=1KHz Vin=Vout+1V	--	40	--	dB
Supply Current	Iss1	--	--	1	2	uA
Input Voltage	Vin	--	3.5	--	15	V

Electrical Characteristics by Output Voltage：

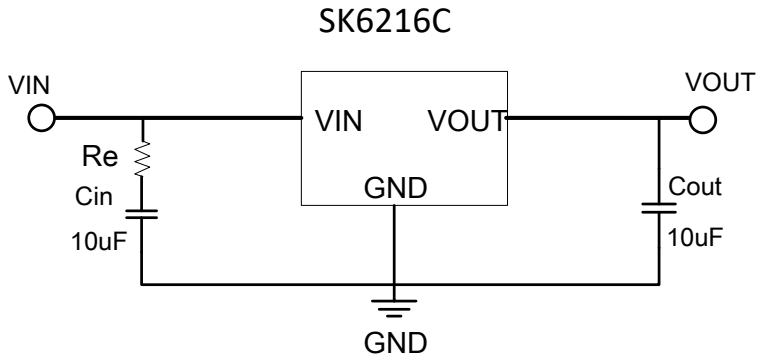
Output Voltage Vout(V)	Dropout Voltage Vdif（V）		
	Conditions	Typ.	Max.
2.0 < Vout ≤ 2.8	Iout=80 mA	0.4	0.6
2.8 < Vout ≤ 4.0	Iout=100 mA	0.26	0.46
4.0 < Vout ≤ 5.0		0.23	0.42
2.8 < Vout ≤ 4.0	Iout=200 mA	0.53	0.82
4.0 < Vout ≤ 5.0		0.42	0.76
3.0 < Vout ≤ 4.0	Iout=500 mA	1.5	1.8
4.0 < Vout ≤ 5.0		1.2	1.5

Typical Application

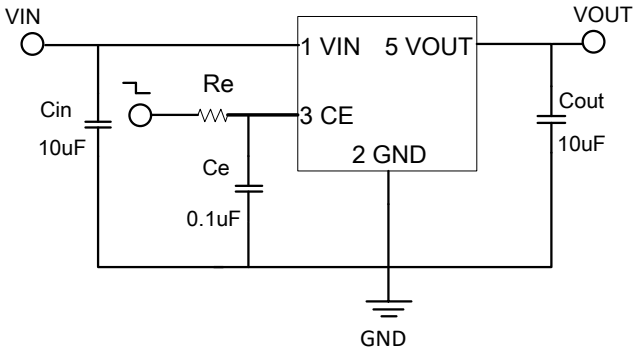


Note1: Cin=Cout=10uF. (10uF Electrolytic capacitor is recommended).

Note2: If the input and output capacitors are ceramic, add a resistor at the input, as follows.



Note: Re= (1.2~1.8)Ω.



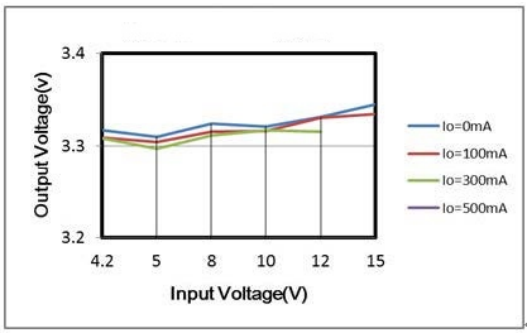
Note1:Input capacitor C_{IN}=10uF.

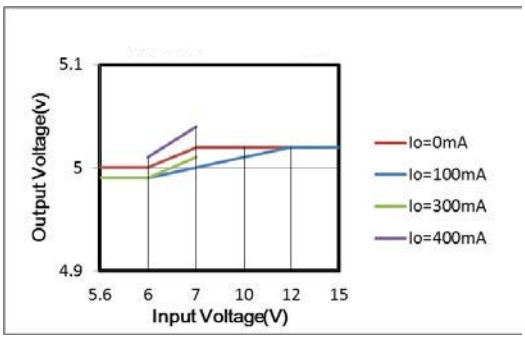
Note2:Ouput capacitor C_{OUT}=10uF/6.8uF(1uF Tantalum capacitor or 6.8uF ceramic capacitor is recommended).

Note3:The CE port is recommended to connect the current limiting resistor Re. The recommended resistance is 10K~47K. When the input voltage is larger than or equal to 12V, it is recommended to add a 0.01uF capacitor Ce.

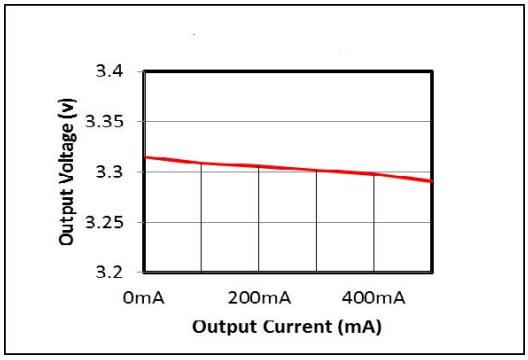
Typical Performance Characteristics

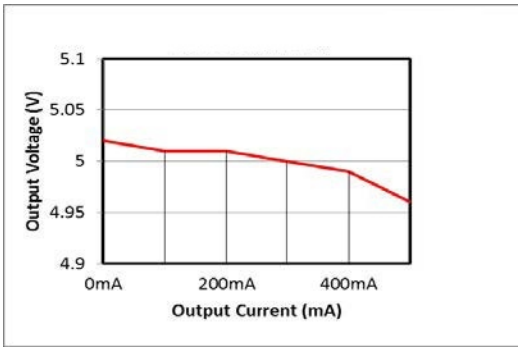
(1) Output Voltage vs Input voltage



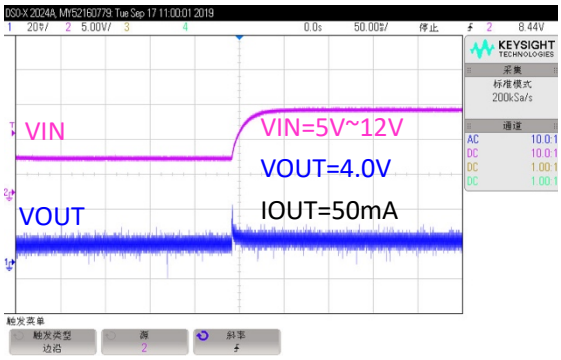


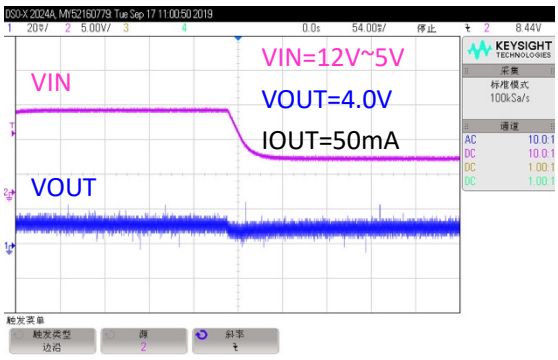
(2) Output Voltage vs.Output Current



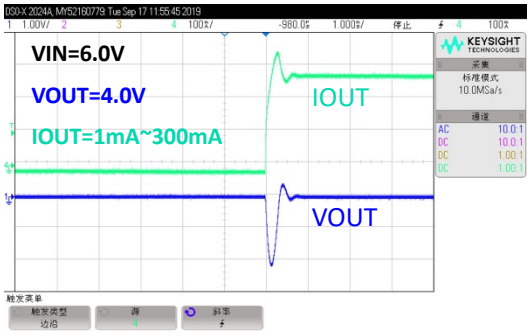


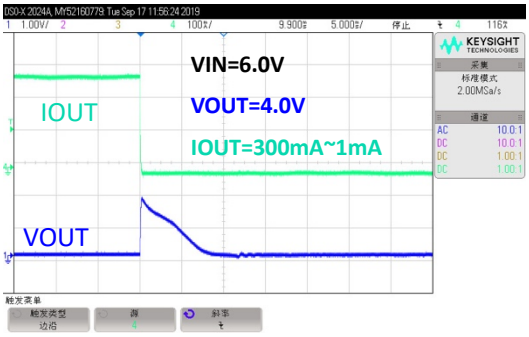
（3） Input Transient Response



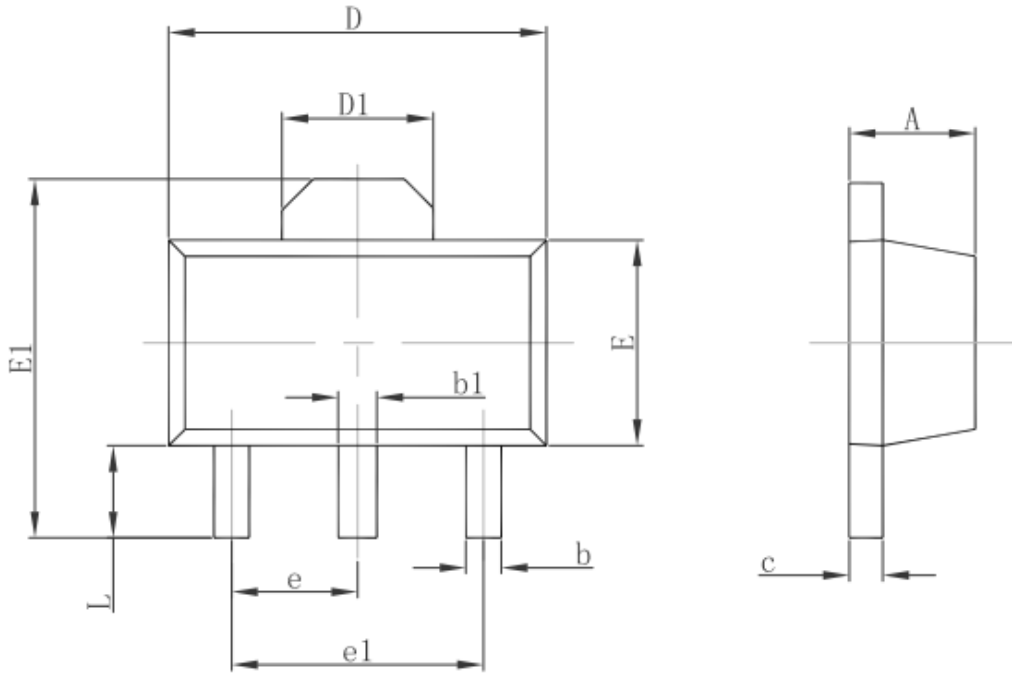


（4） Load Transient Response



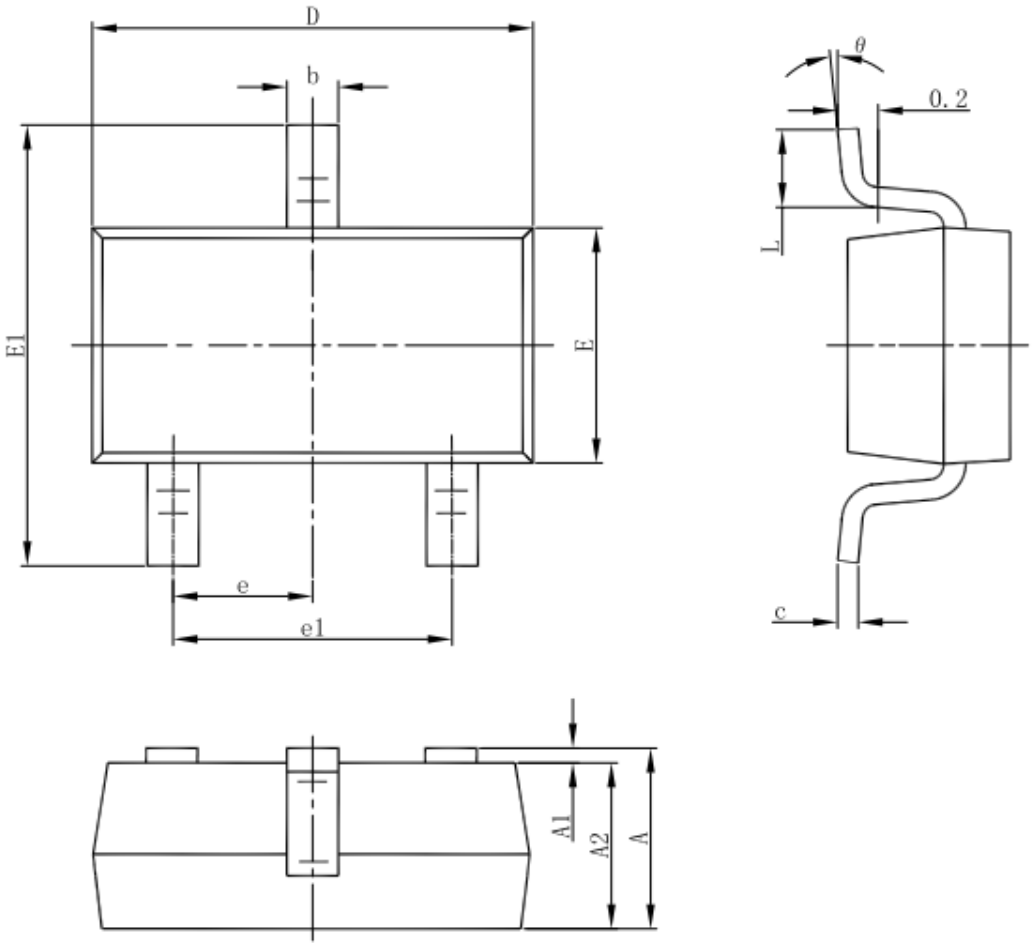


Package Dimensions: 3-pin SOT89



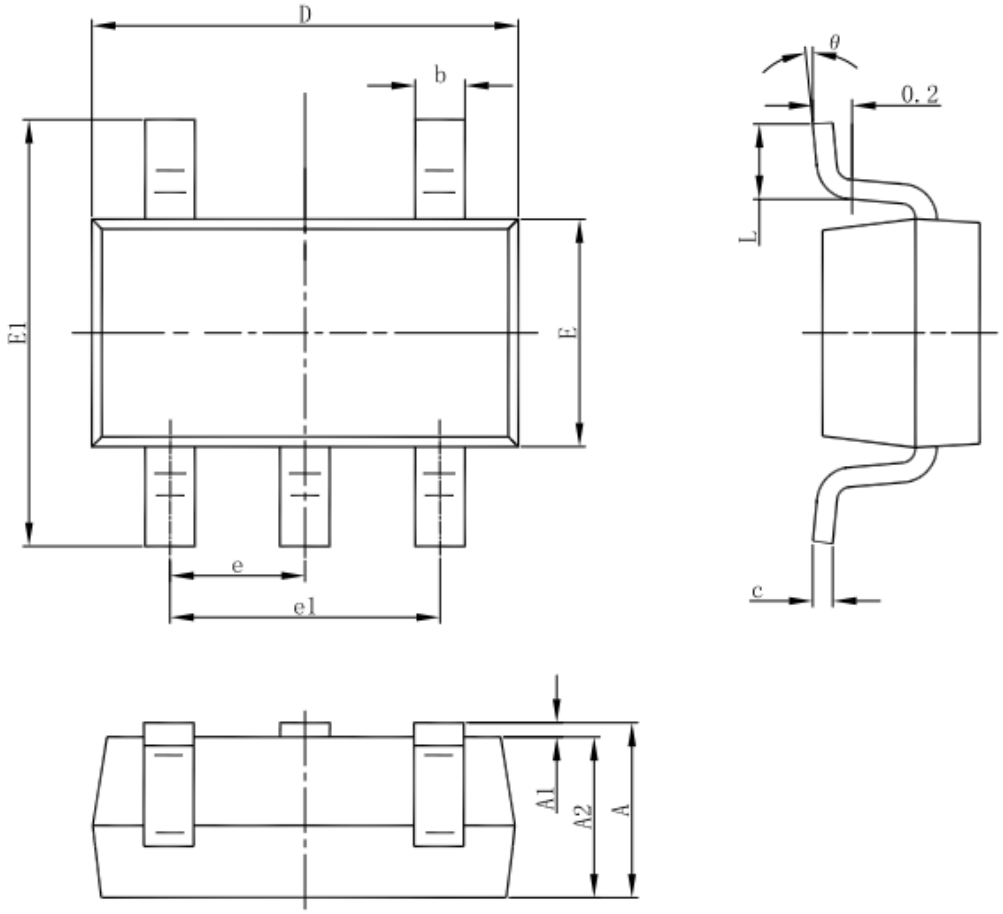
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

Package Dimensions: 3-pin SOT23-3



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

Package Dimensions: SOT23-5



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Linear Voltage Regulators ***category:***

Click to view products by Suntek ***manufacturer:***

Other Similar products are found below :

LV56831P-E LV5684PVD-XH MCDTSA6-2R L7815ACV-DG PQ3DZ53U LV56801P-E TLE42794G L78L05CZ/1SX L78LR05DL-MA-E 636416C 714954EB BA033LBSG2-TR LV5680P-E L78M15CV-DG L79M05T-E TLS202A1MBVHTSA1 L78LR05D-MA-E NCV317MBTG NTE7227 LV5680NPVC-XH LT1054CN8 MP2018GZD-5-Z MP2018GZD-33-Z MIC5281-3.3YMM MC78L06BP-AP TA48LS05F(TE85L,F) TA78L12F(TE12L,F) TC47BR5003ECT TCR2LN12,LF(S TCR2LN28,LF(S TCR2LN30,LF(S TCR3DF295,LM(CT TCR3DF40,LM(CT BA178M20CP-E2 L78M12ABDT LM7812SX/NOPB LR645N3-G-P003 LR645N3-G-P013 ZXTR2005P5-13 SCD7812BTG TCR3DF335,LM(CT ZXTR2012K-13 TLE42994E V33 ZXTR2008K-13 ZXTR2005K-13 L88R05DL-E ADP3300ARTZ-2.7RL7 LM120K-15/883 IFX54441LDVXUMA1 LM317D2T-TR