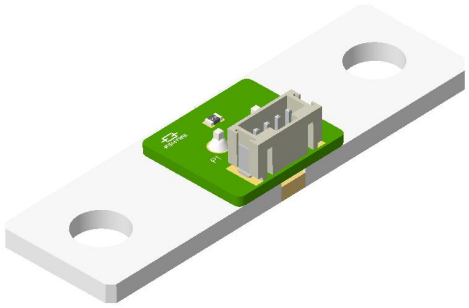
PCBA type shunt

For high current signal sampling，ultra-low resistance value，high power shunt

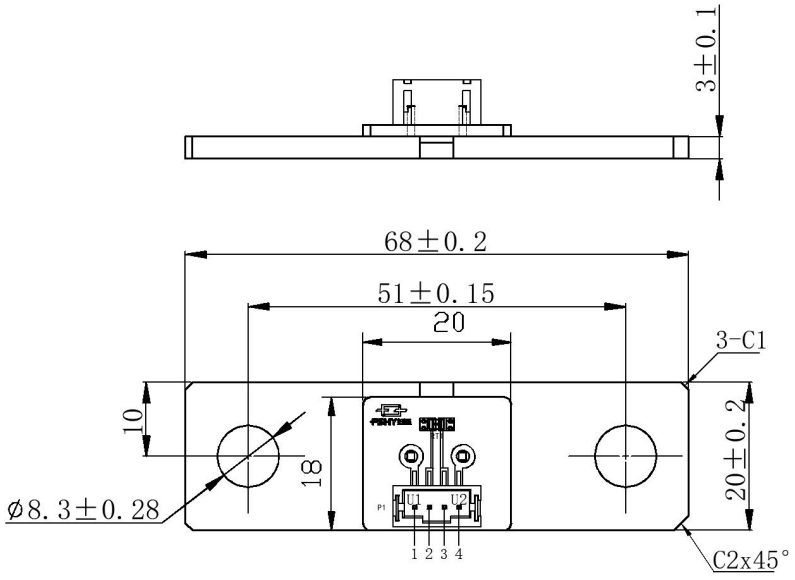
AEC-Q200 qualified,high stability，ultra-low thermal EMF and TCR



Features:

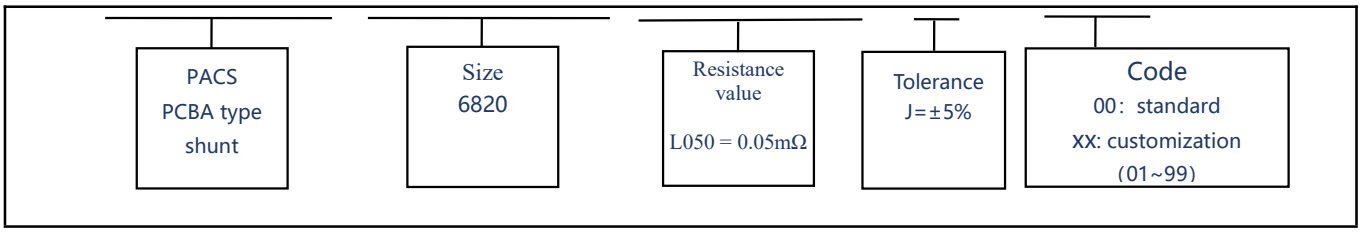
- PCBA type shunt resistor with high temperature resistance automotive-grade connector for voltage sampling
- built-in NTC Temperature Sensor ,real-time temperature output,can be used for temperature control or thermal drift compensation
- continuous load power can reach up to 18W, continuous load current can up to 600A
- the shunt's copper terminals plates with nickel and tin,which prevents oxidation and ensures better electrical connections.
- RoHS compliant
- customization

Dimensions

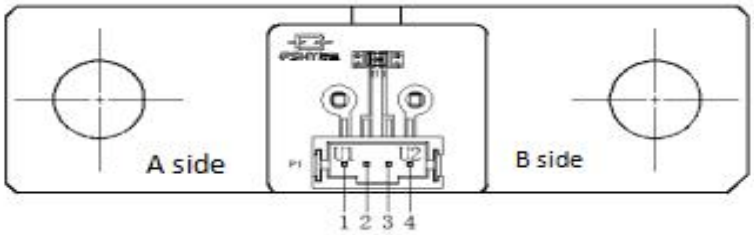


Type Designation(example): PACS6820 L050J00 PACS6820 0.05mohm 5% standard

P	A	C	S	6	8	2	0	L	0	5	0	J		0	0

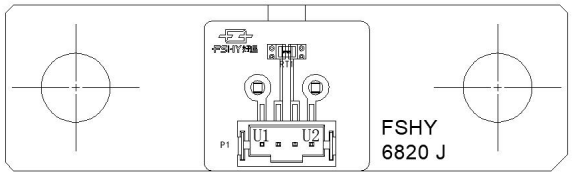


definition of pin for pcba type shunt:



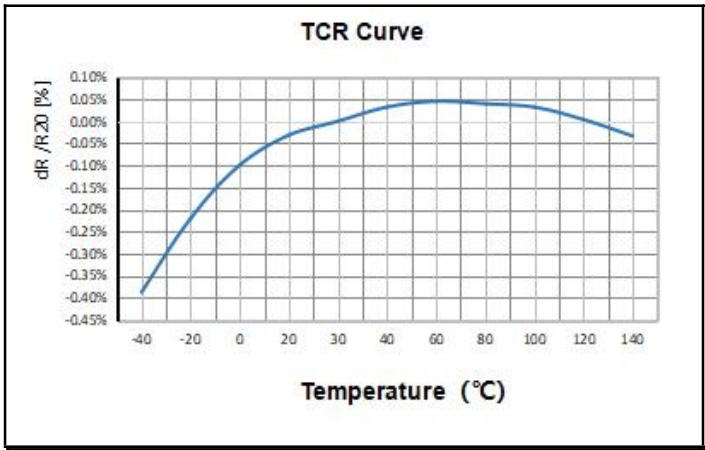
Pin	Definition		
1	connect Pin 1 with A side CS1, used for current detection		
2	connect Pin 2 with NTC, used for temperature detection		
3	connect Pin 3 with NTC, used for temperature detection		
4	connect Pin 4 with B side CS1, used for current detection		
NTC thermistor_R1	VISHAY_NTCS0805E3103HMT_automotive-grade(alternative: TCT6G_H103H357V)		
Connector	VIDEOTEK COMPANY LIMITED(VDT)		
	PH2.0 upright welding 4P	PH2.0 Rubber Shell 4P	PH2.0 reed
Conformal Coating	Dymax 9483		

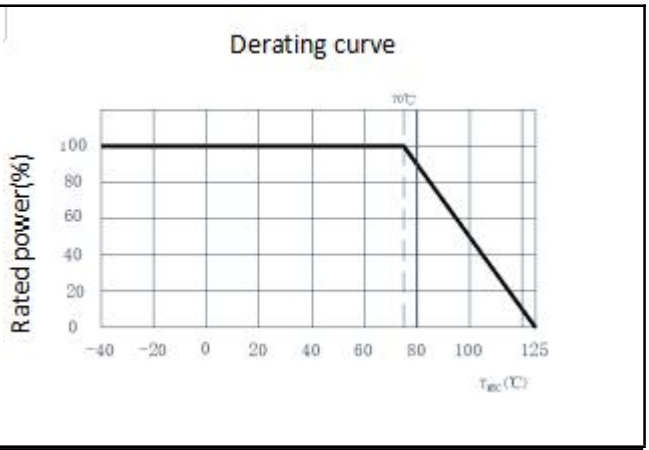
QR code rules:



Marking Instructions	FSHY	6820	J
	supplier	size	tolerance

TCR Curve for shunt	Derating Curve



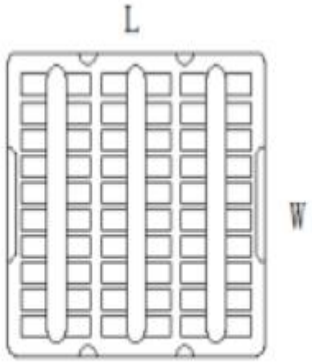


parameter	Value and units
shunt	
resistance value	50μΩ
tolerance	5%
temperature range	-40℃~+125℃
TCR	±100ppm
rated power P70	18W
thermal EMF	<1μV/℃
inductance	< 5nH
NTC (automotive-grade)	
resistance value at 25° C	10k
tolerance for R25	3%
B25/85	3570K
tolerance for B25/85	3%
temperature range	-40℃~+150℃

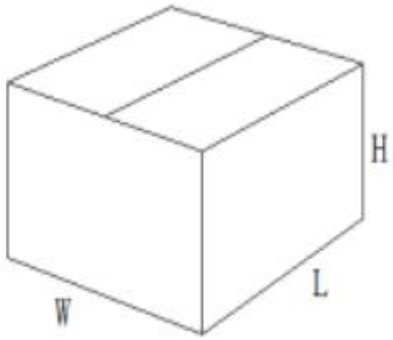
Performance:		
Test Item	**standard**	**Test method**
TCR	Within specified TCR	IEC60115-1 4.8, measured point-40°C~+140°C, reference point+20°C
Resistance to soldering heat	No visible damage ▵R±0.5% Maximum	IEC60115-1 4.18, 260°C tin bath, 10s
load life	No visible damage ▵R±1.0% Maximum	IEC 60115-1 4.25.1, 1000hrs., 70°C±2°C, rated current, or the maximum current rating of the component (whichever is lower) is applied for 1.5 hours/0.5 hour interruption
High temp. & high humidity	No visible damage ▵R±1% Maximum	Applying 10% of the rated power (current) or the limiting current of the component (whichever is lower) for a duration of 1000 hours in a temperature of 85°C and a humidity of 85% according to MIL-STD-202 method 103

temperature cycle	No visible damage △R±1% Maximum	IEC60115-1 4.19， -55°C@30mins～+125°C@30mins；1000cycles
High temperature storage	No visible damage △R±1% Maximum	IEC60115-1 4.25.3， 1000小时@125°C，without loading current and voltage
Low temperature load	No visible damage △R±0.5%Maximum	IEC60115-1 4.36，cooled from room temperature to -55°C ,no load for 1.5 hours,applying rated power,continuously flowing for 45 minutes,cool for 15 minutes，then recover to room temperature for testing again.
vibration	No visible damage △R≤±0.5% Maximum	MIL-STD-202 Method 204， peak acceleration：5g（gravity acceleration) ,frequency varied： (10~2000Hz) test direction：X、Y、Z direction，12 cycles in each direction ， ，each cycle 20min，total about 12h
Impact test	No visible damage △R≤±0.5% Maximum	MIL-STD-202 Method 213 Impact acceleration：100g(gravity acceleration) Impact pulse width：6ms Impact waveform：half sine wave Impact direction：±X, ±Y, and ±Z directions each 3 times

specifications and measurements of the packaging(unit:mm)



tray



carton

specification	pieces/layers	L（mm)	W（mm)	H（mm)
tray	30pcs	350	350	15
carton	9 layers	360	360	150

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version update record

Version NO.	update record	person in charge	Issue date
A0	updated version release	Fameng Hong	06Nov2023