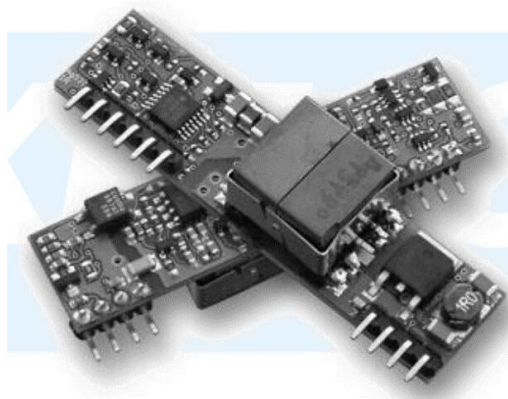




■ Part List

Part Type	5V	12V	24
KRECO P/N No.	Kg5305	Kg5300	Kg5324
Max Output Power	2 Watts Peak	30 Watts Peak	30 Watts Peak
	20 Watts Continuous	24 Watts Continuous	24 Watts Continuous

■ Features

- Fully supports IEEE802.3af/at
- Small Single In-Line (SIL) package size – 57.3mm (L) x 14mm (H)
- Input Voltage Range 44V to 57V
- Support PoE applications in both of Fast / Gigabit Ethernet environments.
- Short Circuit Protection
- Over-temperature Protection
- Programmable Classification (Default:Class 4)
- High Efficiency
- Isolation level 1.5KVrms.
- Easy Installation and Low Cost (Isolation Type, Minimum External Devices required)
- Low Output Ripple and Noise
- Adjustable Output Voltage
- 1500Vrms Isolation (Input-Output)

■ Description

The Kg5300x Power-over-Ethernet (PoE+) module is designed to extract power from a conventional twisted pair Category 5 Ethernet cable, conforming to the IEEE 802.3at PoE standard.

The Kg5300 has been designed to extract power from Power Sourcing Equipment (PSE) over a conventional twisted pair Category 5 Ethernet cable. The module input conforms to the IEEE803.2at standard for signature recognition and class programming.

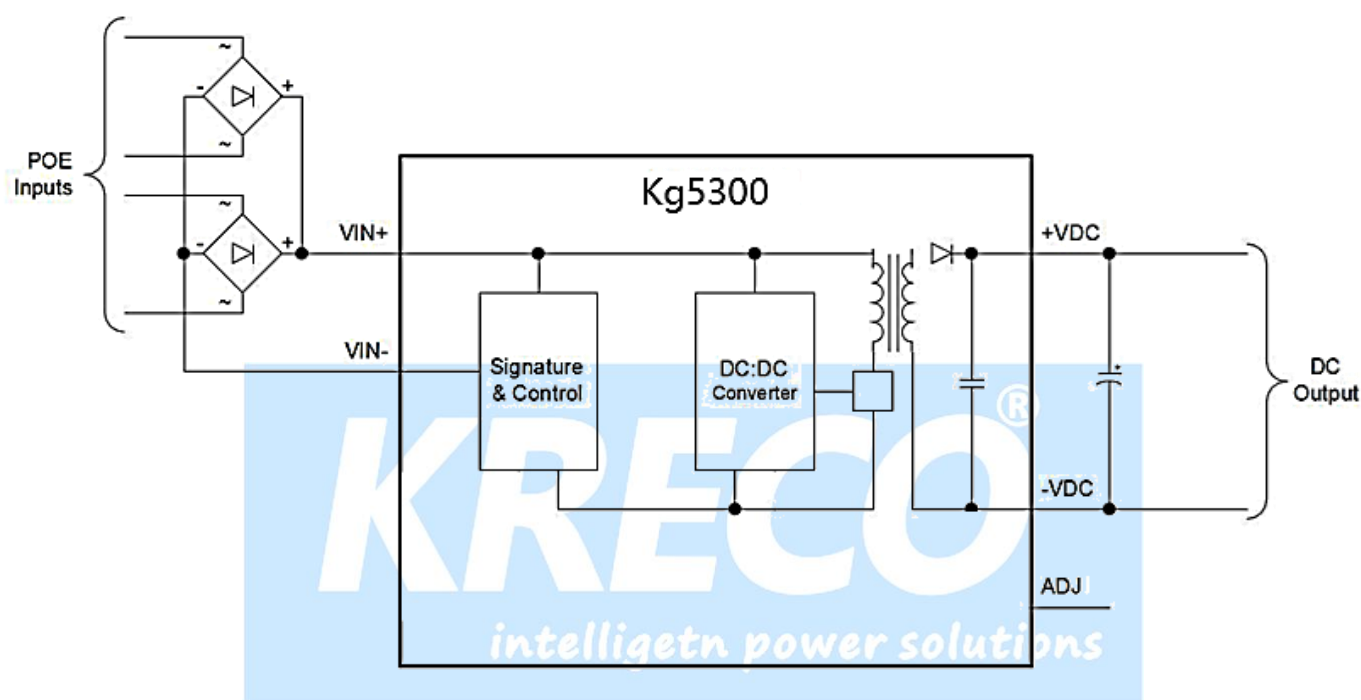
The high efficiency DC/DC converter operates over a wide input voltage range with a low ripple and low noise output. The DC/DC converter also has built-in output overload, output short-circuit and over-temperature protection and provides a 1500Vdc (input to output) isolation barrier.

■ Applications

- Midspan devices
- CCTV Security devices
- Telecommunication devices
- PoE application facilities
- Industrial equipment



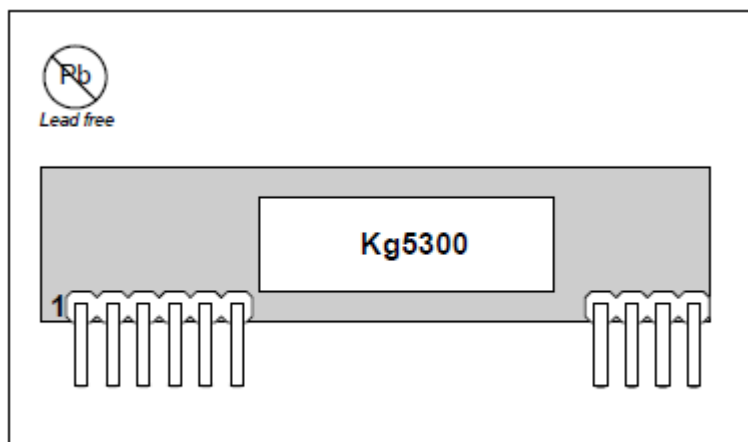
■ Block Diagram



■ Pin Assignment

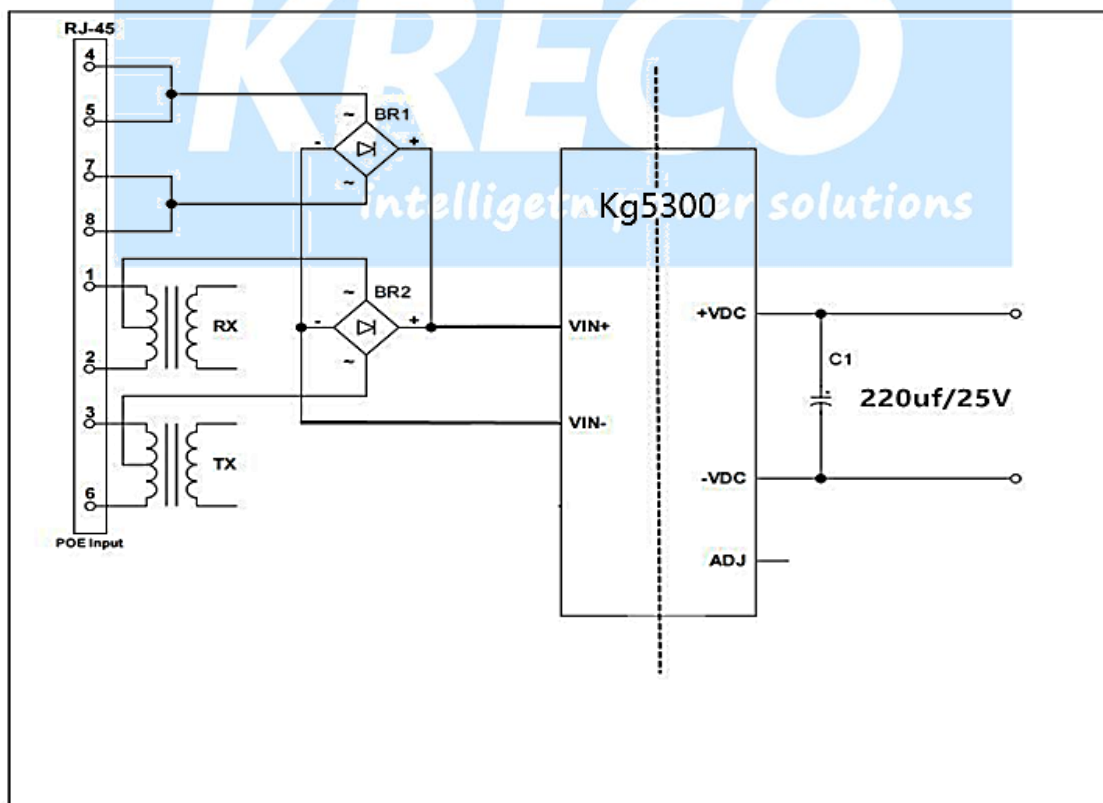
1	VIN+	POE Direct Input +. This pin connects to the positive (+) output of the POE input bridge rectifiers.
2	VIN-	POE Direct Input -. This pin connects to the negative (-) output of the POE input bridge rectifiers.
3	NC	Internal Connection. Do not connect to this pin.
4	NC	Internal Connection. Do not connect to this pin.
5	-VDC	Negative DC Output. This pin provides the negative regulated output from the Kg5300 and is internally connected to pin 8.
6	+VDC	Positive DC Output. This pin provides the positive regulated output from the Kg5300.

7	ADJ	Output Adjust. The output voltage can be adjusted from its nominal value, by connecting an external resistor from this pin to either the +VDC pin or the -VDC pin.
8	-VDC	Negative DC Output. This pin provides the negative regulated output from the Kg5300 and is internally connected to pin 5.

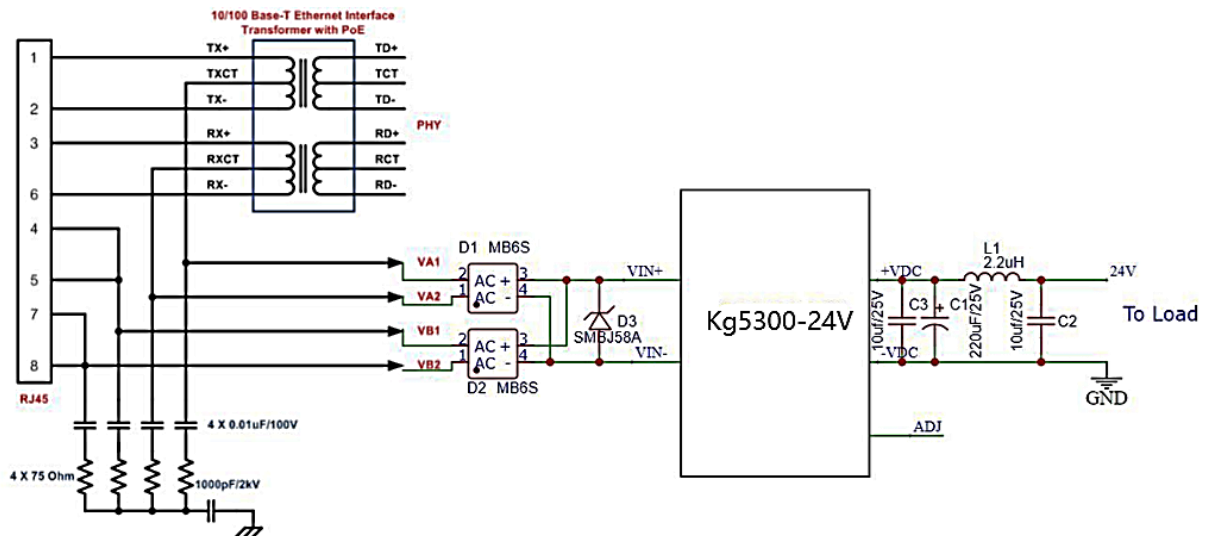


Kg5300 SIL Package Format

■ Typical Connections



*Add 330uf / 16V capacitance at the output, This will reduce the ripple and noise to typically 200mVp-p. 12V@2A.



*optional external lc filter for lower ripple and noise, This will reduce the ripple and noise to typically 50mVp-p. 12V@2A.

Test Data

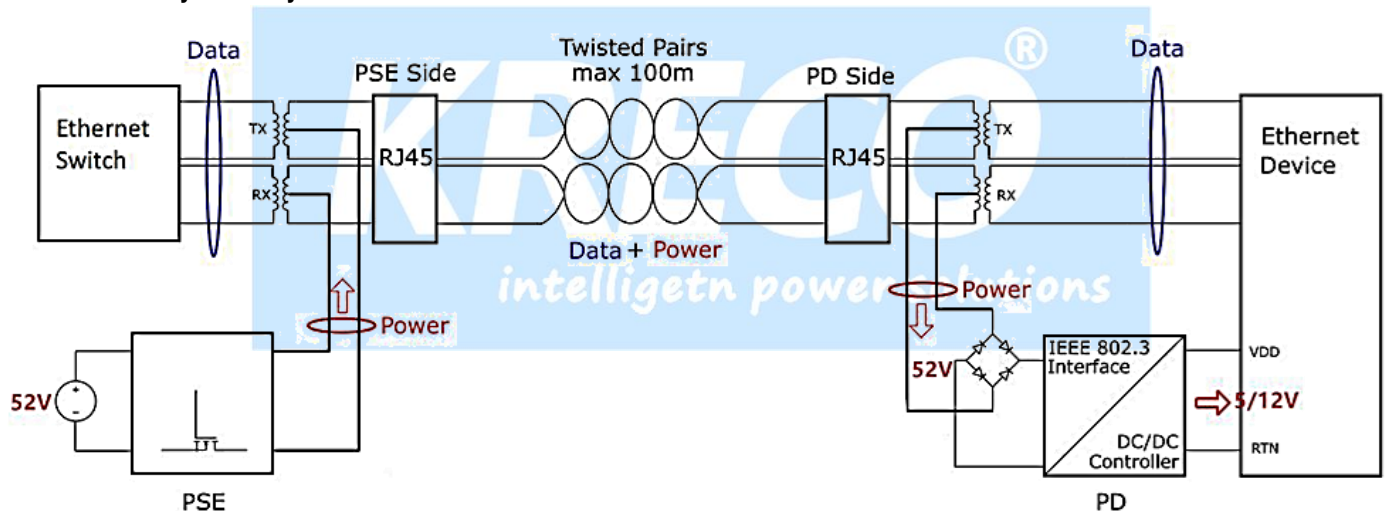
Model	Input Voltage	Input Current	Output Voltage	Output Current	Efficiency	Ripple Output Noise
	V	mA	V	A	%	mVp-p
Kg5300 -12V	50.99	646	12.33	2.4	89.84%	300
	51.02	536	12.33	2	90.18%	270
	51.06	400	12.33	1.5	90.56%	230
	51.1	268	12.33	1	90.03%	210
	51.13	136	12.33	0.5	88.66%	130
	51.16	5	12.33	0	0.00%	

■ Specifications

No.	Parameter	Symbol	Min	Typical values	Max	Unit
1	Input Voltage	V _{in}	44	48	57	V
2	output voltage	+VDC	11.8	12	12.4	V
3	output Current	PWR	0.02	2	2.5	A
4	Isolation Voltage	VISO		1.5		KV
5	Ripple Output Noise	VRN		140*		mVp-p
6	Storage Temperature	T _j	-40	25	85	°C
7	Operating Temperature	T _{stg}	-40	25	80	°C

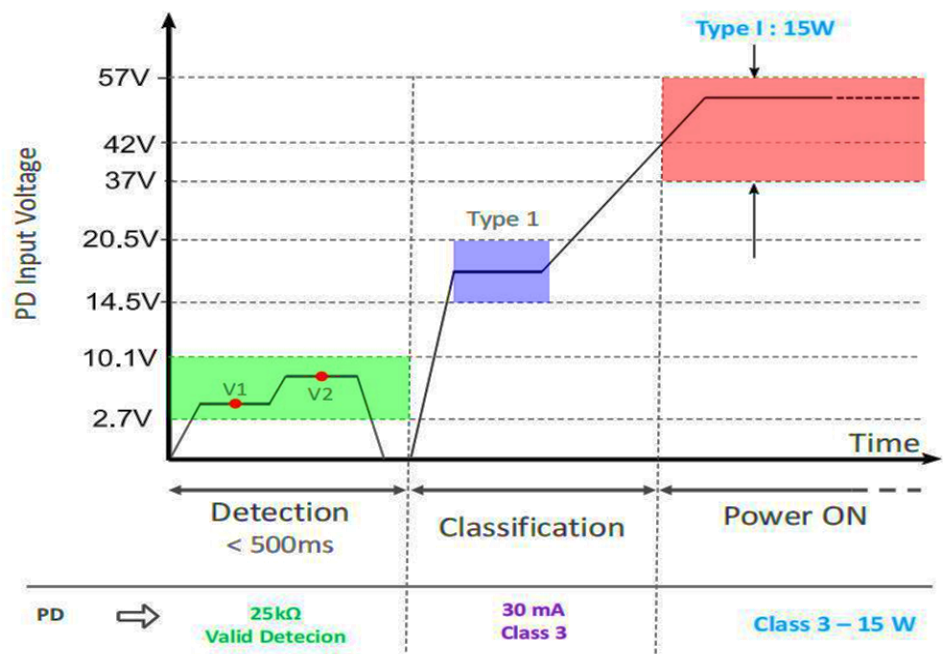
*Add 330uf / 16V capacitance at the output, This will reduce the ripple and noise to typically **200mVp-p**. 12V@2A

■ Power Delivery in PoE Systems

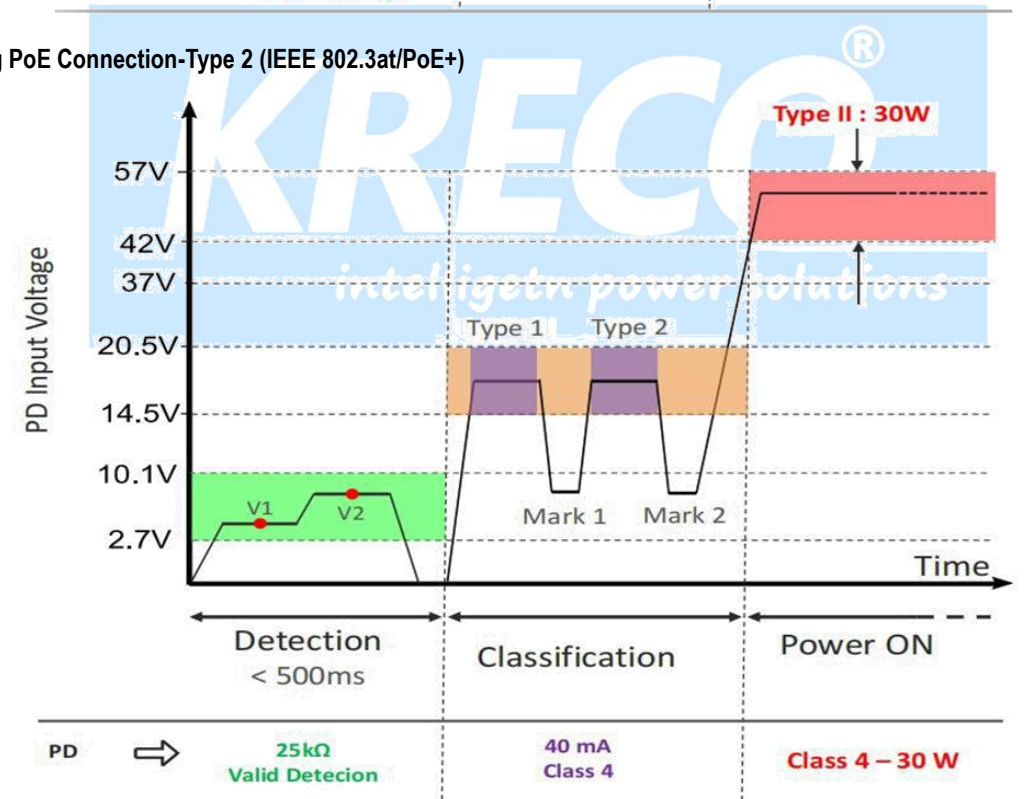


	Type 1 802.3af			Type 2 802.3at	Type 3 802.3bt		Type 4 802.3bt	
Power Class	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8
Power from PSE	4 W	7 W	15.4 W	30 W	45 W	60 W	75 W	90 W
Power delivered to PD	3.84 W	6.49 W	13 W	25.5 W	40 W	51 W	62 W	71.3 W

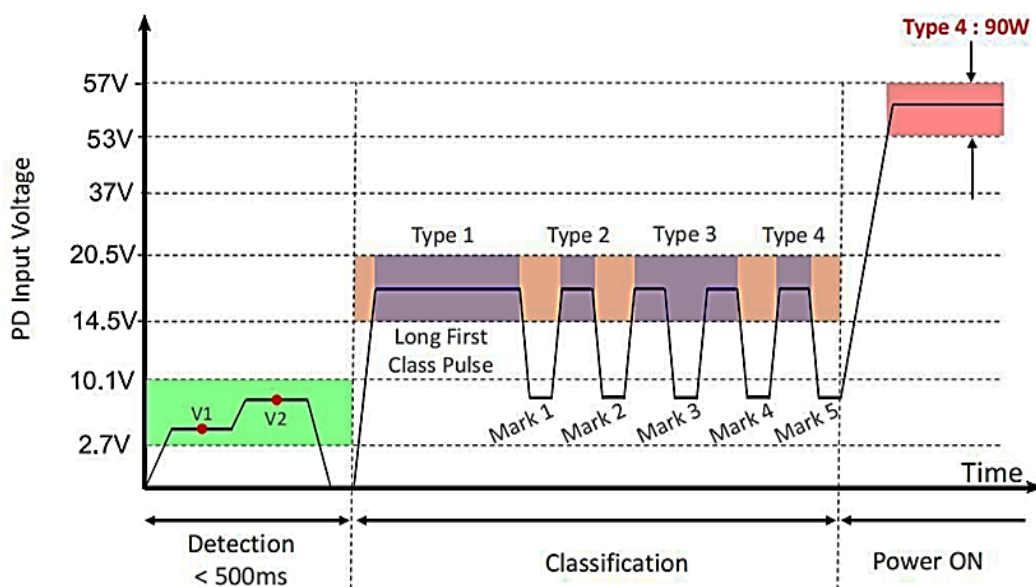
■ Establishing PoE Connection-Type 1 (IEEE 802.3af/PoE)



■ Establishing PoE Connection-Type 2 (IEEE 802.3at/PoE+)

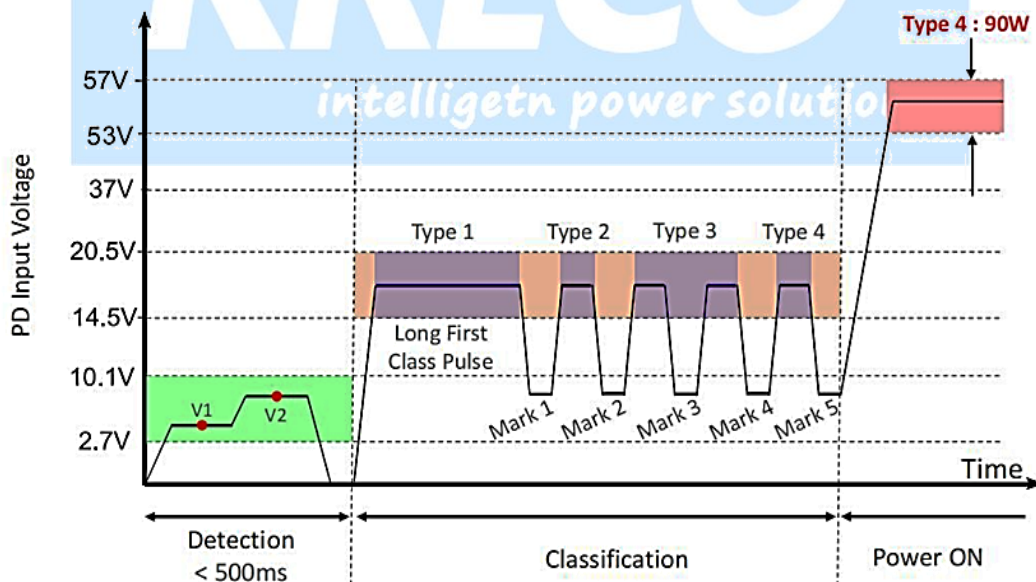


■ Establishing PoE Connection-Type 3 (IEEE 802.3bt)



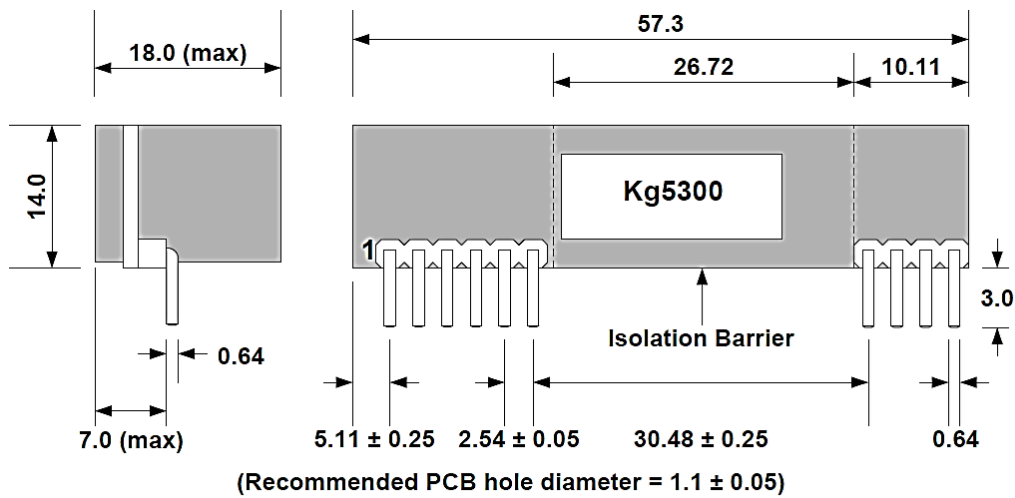
PD ⇒ 25kΩ Valid Detection 40 mA Class 4 30 mA Class 3 Class 8 - 90 W

■ Establishing PoE Connection-Type 4 (IEEE 802.3bt)



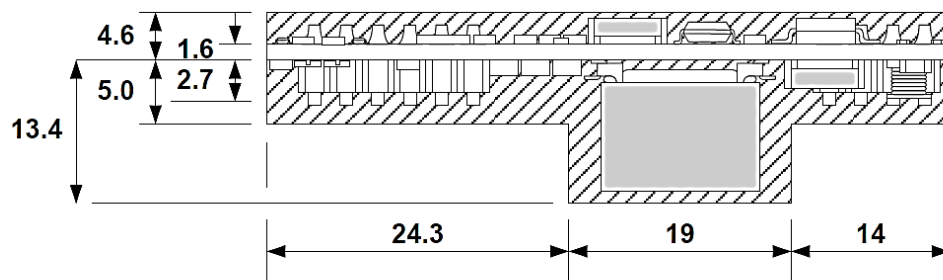
PD ⇒ 25kΩ Valid Detection 40 mA Class 4 30 mA Class 3 Class 8 - 90 W

■ Package Unit: mm



Dimensions (in mm) are nominal +/- 0.25 unless otherwise stated

■ Plan View Unit: mm



■ **Note**

- (1) x for series version, normally include 5v, 12v, 24v, 48v version, more type could be re-designed, or added to production order.
- (2) 00 for Output voltage, what you are going to order, please must specify to sales.
- (3) Safety model number differs from the order number, part number, and shape number as per respective OEM/ODM factories.

Disclaimer: Kreco is not responsible for any error, and reserves the right to make changes without notice.

Please visit our website at www.kreco.com.cn for the most up-to-date specifications and contact information.