

TECHNICAL SPECIFICATION All specifications are typical at nominal input, full load and 25°C unless otherwise noted

INPUT SPECIFICATIONS

| Parameter | Conditions | Min. | Typ. | Max. | Unit |
|-------------------------------|---|------|------|------|------|
| Operating input voltage range | Compatible with 72/96/ 110V nominal battery voltage | 43 | 110 | 160 | VDC |
| Start up voltage | | | | 30 | VDC |
| Transient voltage | 1 second, max. | | | 165 | VDC |
| | 100 ms, max. | | | 176 | VDC |
| | 20 ms, max. | | | 385 | VDC |
| Brownout | 100 ms, max. | 36 | | | VDC |

OUTPUT SPECIFICATIONS

| Parameter | Conditions | Min. | Typ. | Max. | Unit |
|--------------------|------------------------------|------|-------|-------|------|
| Output voltage | | | Vin-2 | Vin-1 | VDC |
| Clamping voltage | Input transient voltage mode | | 168 | | VDC |
| Output power range | | 21 | | 150 | W |

GENERAL SPECIFICATIONS

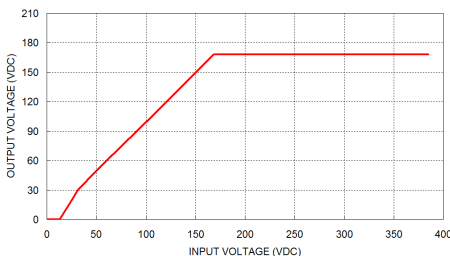
| Parameter | Conditions | Min. | Typ. | Max. | Unit |
|------------------|------------|------|------|------|--|
| Standard meets | | | | | RIA12 Surge Susceptibility NF F 01-510 Surge Susceptibility |
| Case material | | | | | Non-conductive black plastic |
| Base material | | | | | Non-conductive black plastic |
| Potting material | | | | | Silicone (UL94 V-0) |
| Weight | | | | | 22g (0.78oz) |

ENVIRONMENTAL SPECIFICATIONS

| Parameter | Conditions | Min. | Typ. | Max. | Unit |
|-------------------------------|---------------|------|------|------|--------------|
| Operating ambient temperature | With derating | -40 | | 105 | °C |
| Maximum case temperature | | | | +105 | °C |
| Storage temperature range | | -55 | | +125 | °C |
| Thermal shock | | | | | MIL-STD-810F |
| Vibration | | | | | MIL-STD-810F |
| Relative humidity | | | | | 5% to 95% RH |

CAUTION: This power module is not internally fused. An input line fuse must always be used.

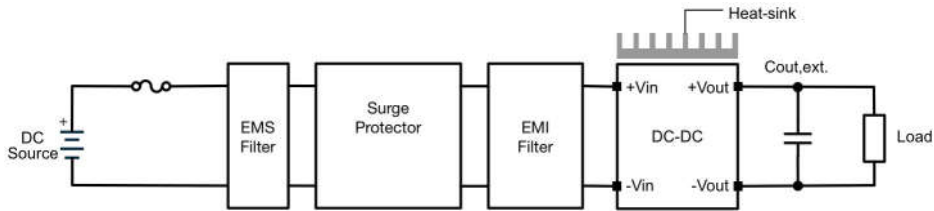
CHARACTERISTIC CURVE



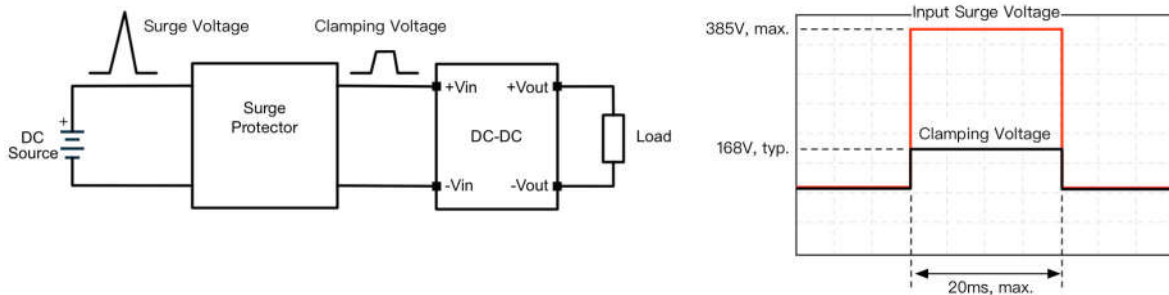
Transfer Function

TYPICAL APPLICATION

The schematic for typical application is shown as below.



Surge protector clamps over-voltage to a safe value in order to protect the power module from damaging. According to RIA12, the module should keep working during input surge occurs.

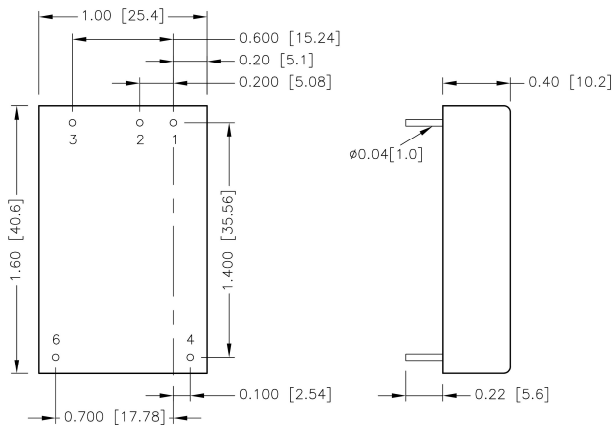


This surge protector can be used for 72V · 96V and 110V battery system of railway application. Input range of DC-DC converter also has to meet 72V · 96V and 110V system input range.

| Nominal Input | EN50155 Standard | | | RIA12 Standard | | | |
|---------------|--------------------------------------|--------------------------|------------------------|--------------------------------------|--------------------------|------------------------|--------------------------|
| | Permanent Input range (0.7-1.25 Vin) | Brownout 100ms (0.6xVin) | Transient 1s (1.4xVin) | Permanent Input range (0.7-1.25 Vin) | Brownout 100ms (0.6xVin) | Transient 1s (1.5xVin) | Transient 20ms (3.5xVin) |
| 72V | 50.4 – 90V | 43.2V | 100.8V | 50.4 – 90V | 43.2V | 112.5V | 252V |
| 96V | 67.2 – 120V | 57.6V | 134.4V | 67.2 – 120V | 57.6V | 144V | 336V |
| 110V | 77 – 137.5V | 66V | 154V | 77 – 137.5V | 66V | 165V | 385V |

| Nominal Input | NF F 01-510 Standard | | |
|---------------|-----------------------|--------------------------|-----------------|
| | Permanent Input range | Brownout 100ms (0.5xVin) | Transient 100ms |
| 72V | 50 – 90V | 36V | 115V |
| 96V | / | / | / |
| 110V | 77 – 137V | 55V | 176V |

MECHANICAL DRAWING



BOTTOM VIEW

PIN CONNECTION

| PIN | DEFINE |
|-----|----------|
| 1 | +Input |
| 2 | NC |
| 3 | - Input |
| 4 | +Output |
| 6 | - Output |

1. All dimensions in inch [mm]
2. Tolerance :x.xx±0.02 [x.x±0.5]
x.xxx±0.01 [x.xx±0.25]
3. Pin dimension tolerance ±0.004[0.10]