XV1 Series
High Power Pre-Charge Resistors



- Pre-charge & discharge resistors
- AEC Q200 Automotive grade*
- Power ratings from 20W to 100W
- Resistance ranges from 0.5Ω to 3KΩ
- Tolerances of 0.5%, 1%, 5%, 10%
- Compact packaging
- Non-inductive winding available
- Flameproof construction

RoHS Compliant ✓

Technical Data — Table 1

Type	XV1-S20	XV1-20	XV1-30	XV1-40	XV1-50	XV1-60	XV1-100
Power rating (±5%, without heatsink)	20W	20W	30W	40W	50W	60W	100W
Resistance range	0.5Ω ~ 3KΩ	0.5Ω ~ 3KΩ	0.5Ω ~ 3KΩ	0.5Ω ~ 3KΩ	0.5Ω ~ 3KΩ	0.5Ω ~ 3KΩ	0.5Ω ~ 3KΩ
Resistance tolerance	± 0.5%, ± 1%, ± 5%, ± 10%						
Maximum voltage	450VDC				850VDC		
Design voltage	√(P x R)						

Performance Data — Table 2

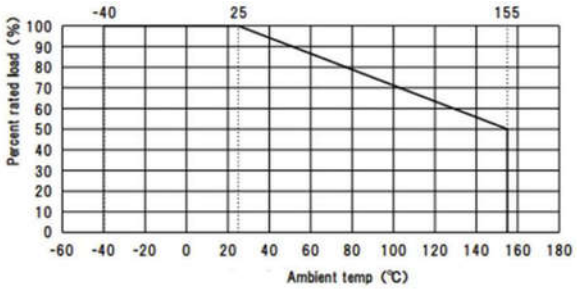
TCR	0.5Ω to 1Ω: 1300ppm/ °C | 1.1Ω to 5Ω: 500ppm/ °C | 5.1Ω to 1kΩ: 260ppm/ °C
Maximum current	15A
Dielectric voltage	4500V
Insulation resistance	100MΩ
High temperature storage	125°C, 1000hr, (±1% +0.05Ω)
High temperature & humidity	85°C, 85% RH, 1000hr, 10% of operating power, 1000hr (±3% +0.05Ω)
Operational life	125°C at rated power, 1000hr, (±3% +0.05Ω)
Operating temperature	-40°C ~ +155°C (±2% +0.05Ω)
Temperature cycling	(-55°C ~ +125°C), Each dwell time, 30 mins, 1h/cyc, 1000 cycles (±2% +0.05Ω)
Load life	300,000 cycles (±3% +0.05Ω)
Short duration	200ms @ 15A (±2% +0.05Ω)
Mechanical vibration	100G, 6ms half sine, 3 times/axis, Total 6 axis (±1% +0.05Ω)
Short time overload	5X for 5 sec (±2% +0.05Ω)
Charging/discharging test	95% ~ 98% Precharging ratio, 300,000 cycles (±3% +0.05Ω)
Short circuit	Pulse Duration: 200ms. Cycle time: 2 secs 1 time: 5 cycles. Total 5 times (±2% +0.05Ω)
Failure test	500ms ~ 1sec

* This product has undergone rigorous AEC-Q200 testing and is certified in the 100W, 100ohm, +/-5% variant. If you need more detailed information around AEC-Q200 testing for specific resistance values, please feel free to contact our team of engineers.

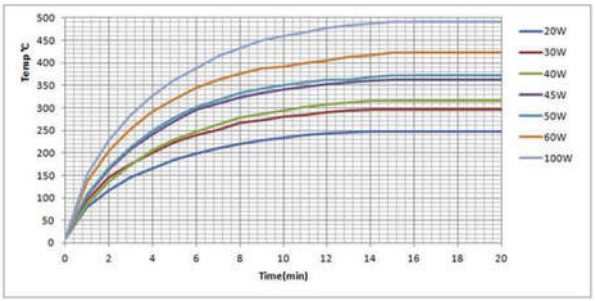
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Performance graphs — Fig. 1

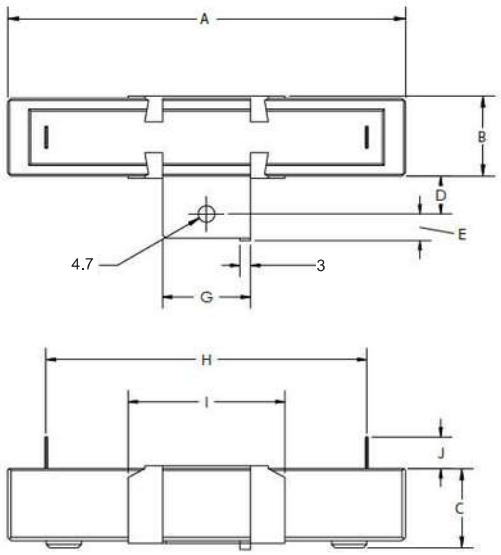
Power derating curve

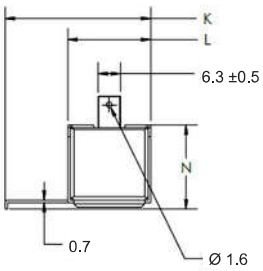


Free air surface temperature rise



Dimensions (mm) — Fig. 2





Dimensions (mm) ± 1mm — Table 3

Type	Power (W)	Weight (g)	A	B	C	D	E	G	H	I	J	K	L	N
XV1-S20	20	23	63	13	13	-	-	-	46	-	9	-	-	-
XV1-20	20	52	60	19	20	11.1	6.9	18	40.2	38	10	37.4	20.4	22.4
XV1-30	30	63	75	19	20	11.1	6.9	18	52	38	10	37.4	19	20.7
XV1-40	40	74	90	19	20	11.3	6.9	18	69.5	38	10	37.4	20.4	20.7
XV1-50	50	74	90	18	20	11.3	6.9	18	69.5	38	9	37.4	20.4	20.7
XV1-60	60	74	90	18	20	11.3	6.9	18	69.5	38	9	37.4	20.4	20.7
XV1-100	100	135	113	22.5	22	10.8	7.6	25	91	44.5	8	41.1	23.4	23.8

Example Ordering Code

