

Super High Efficiency (SHE) rectifier for Telecom applications

The Flatpack2 60/3000 Super HE is contributing to setting the new industry standard for efficiency in the DC power market.

With an efficiency up to 97.8% the Super HE is a premium rectifier particularly suitable for markets and applications where the energy is costly. In grid connected applications the payback time is down to 2 years compared to standard HE rectifiers, and in hybrid applications even faster.

The Flatpack2 60/3000 Super HE is fully compatible with Flatpack2 and Flatpack2 HE systems.



Flatpack2 60V SHE Rectifier

60 / 3000 SHE

Doc 241119.706.DS3 – v3

APPLICATIONS

TELECOM - WIRELESS

- Radio base station / Cell sites
- LTE / 5G / WiMAX
- Mobile switching center (MCS)
- Microwave
- Broadband

TELECOM - FIXED

- Central office
- Telephony servers / switches
- Fiber optics
- Microwave
- Broadband
- Broadcast
- Data center



6U 300A power core with Smartpack S controller



Flatpack2 power core in T3 Outdoor cabinet

KEY FEATURES

- SUPER HIGH EFFICIENCY – >97.8%
- HIGH POWER DENSITY – 33 W/IN3
- COMPATIBLE WITH EXISTING SYSTEMS
- GLOBAL COMPLIANCE
- PATENTED TECHNOLOGY
- HOT PLUGGABLE



Smartpack2 Touch controller

Flatpack2 60V Super HE



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Model	60/3000 SHE
Part number	241119.706
INPUT DATA	
Voltage (nominal range)	206 - 264 V _{AC}
Voltage (operating range)	85 - 264 V _{AC}
Frequency	45 - 66 Hz
Maximum current	16 A _{RMS}
Protection	Fuse in Live, varistor for transient protection, shutdown when V _{IN} is out of range
OUTPUT DATA	
Voltage (default)	67 V _{DC}
Voltage (adjustable range)	54 - 72 V _{DC}
Max power, nominal input	3000 W
Max power, de-rated @V _{IN} = 85 V _{AC}	1000 W
Max current, @V _{OUT} = 60 V _{DC}	50 A
Current sharing	±5.0% of max current
Static voltage regulation (10-100% load)	±0.5%
Dynamic voltage regulation	±5.0% for 10-90% or 90-10% load variation, regulation time < 50ms
Hold up time (3000W load)	>10ms; output voltage > 52.5 V _{DC}
Ripple	< 150 mV _{PP} , 30 MHz bandwidth
Protection	Overvoltage shutdown, short circuit proof, high temperature, hot plug-in inrush current limiting, fuse
OTHER SPECIFICATIONS	
Peak Efficiency	97.8 %
Isolation	3.0 kV _{AC} – input to output 1.5 kV _{AC} – input to protective earth 0.6 kV _{DC} – output to protective earth
Alarms (Red LED)	Low mains shutdown, High and low temperature shutdown, Rectifier Failure, Overvoltage shutdown on output, Fan failure (triggered in combination with high internal temperature), Low voltage alarm, CAN bus failure
Warnings (Yellow LED)	Rectifier in power derate mode, Remote current limit activated, Input voltage out of range, flashing at overvoltage
Normal (Green LED)	Input and output ok
Operating temperature (5 - 95% RH non-cond.)	-40 - 75°C [-40 - 167°F]
Max output power de-rates above temp / to	3000W @ 45°C / 1800 W @ 75°C ¹⁾
MTBF (Telcordia SR-332 Iss.3 method II Case L1)	> 1 500 000 hours
Dimensions[WxHxD] / Weight	109 x 41.0 x 327mm [4.25 x 1.61 x 13"] / 2.050 kg [4.5lbs]
DESIGN STANDARDS	
Electrical safety	IEC 62368-1, EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013
EMC	EN 61000-6-1:2016, -6-2:2016, -6-3:2007 + A1:2011, -6-4:2007 + A1:2011 EN 300 386:v2.1.1, FCC CFR 47 Part 15:2013
Environment	ETSI EN 300 019: 2-1 (Class 1.2) & 2-2 (Class 2.3) EU 2015/863 (RoHS) & 2012/19/EU (WEEE) Normal operating conditions as per IEC 62040-5-3:2016 clause 4.2. Other operating conditions as per IEC 62040-5-3:2016 clause 4.3, must be advised

1) When input mains voltage is below 210 V_{RMS} temperature derating will start at 40 °C and 1500 W will be available at 75 °C

Specifications are subject to change without notice