SILICON BRIDGE RECTIFIERS

Ready for use full-wave bridge rectifiers in a plastic encapsulation.
The bridges are intended for use in equipment supplied from a.c. with r.m.s. voltages up to 420 V and are capable of delivering output currents up to 12A. They are also suitable for use in hi-fi audio equipments and low-voltage industrial power supplies. They may be used in free air or on a heatsink.

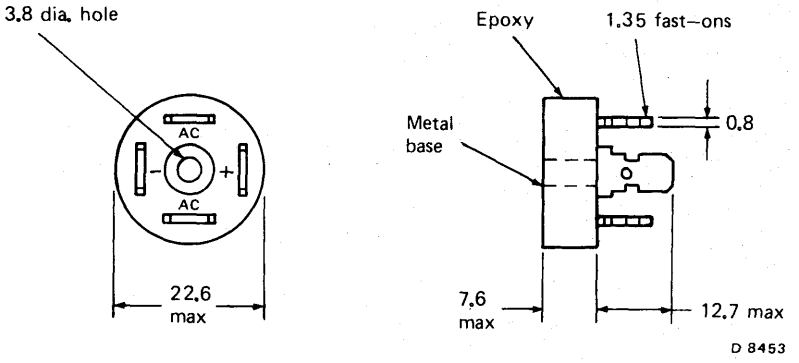
QUICK REFERENCE DATA

			BY260–	200	400	600	
Input							
R.M.S. voltage	$V_{I(RMS)}$	max.		140	280	420	V
Repetitive peak voltage	V_{IRM}	max.		200	400	600	V
Non-repetitive peak current	I_{ISM}	max.			125		A
Peak inrush current	I_{IIM}	max.			250		A
Output							
Average current	$I_{O(AV)}$	max.			12		A

MECHANICAL DATA

Dimensions in mm

Fig. 1.



RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC134).

Input			BY260–	200	400	600	
Non-repetitive peak voltage ($t \leqslant 10$ ms)	V_{ISM}	max.		200	400	600	V
Repetitive peak voltage	V_{IRM}	max.		200	400	600	V
Crest working voltage	V_{IWM}	max.		200	400	600	V
R.M.S. voltage (sine-wave)	$V_{I(RMS)}$	max.		140	280	420	V

Non-repetitive peak current half-sinewave; t = 20 ms; with reapplied V_{IWMmax}				
T_j = 25 °C prior to surge	I_{ISM}	max.	125	A
T_j = 150 °C prior to surge	I_{ISM}	max.	100	A
Peak inrush current (see Fig. 5)	I_{IIM}	max.	250	A
Output				
Average current (averaged over any 20 ms period)				
heatsink operation up to T_{mb} = 60 °C (R-load)	$I_{O(AV)}$	max.	12	A
heatsink operation up to T_{mb} = 60 °C (C-load)	$I_{O(AV)}$	max.	7.5	A
Repetitive peak current	I_{ORM}	max.	20	A
Temperatures				
Storage temperature	T_{stg}		−55 to +150	°C
Junction temperature	T_j	max.	150	°C

THERMAL RESISTANCE

From junction to mounting base	$R_{th\ j\text{-}mb}$	=	4.5	°C/W

CHARACTERISTICS

Forward voltage (2 diodes in series) I_F = 7 A; T_j = 25 °C	V_F	<	2.0	V*
Reverse current (2 diodes in parallel) $V_R = V_{IWMmax}$; T_j = 100 °C	I_R	<	150	μA

*Measured under pulse conditions to avoid excessive dissipation.

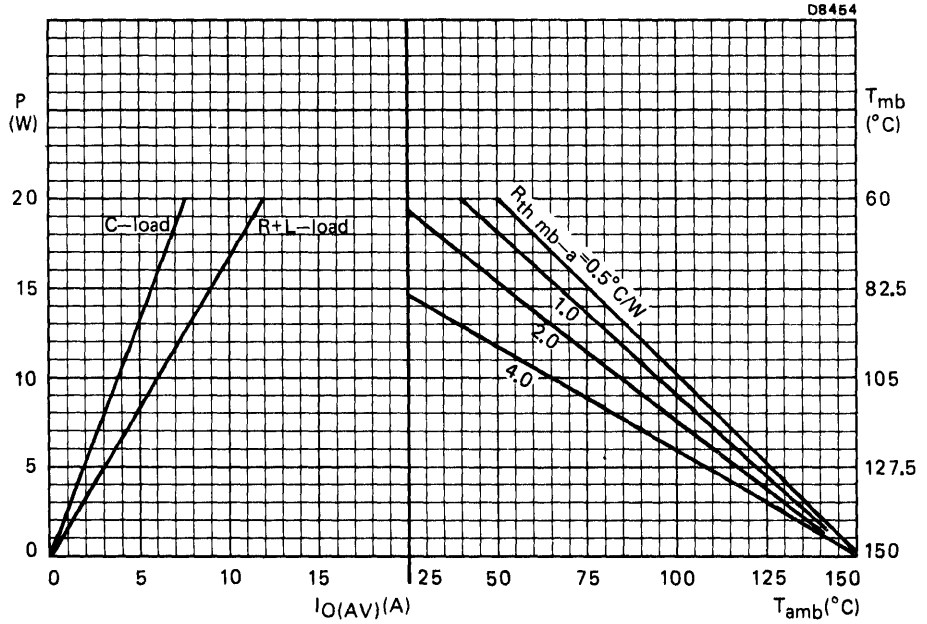


Fig.2 The right-hand part shows the interrelationship between the power (derived from the left-hand graph) and the maximum permissible temperatures.

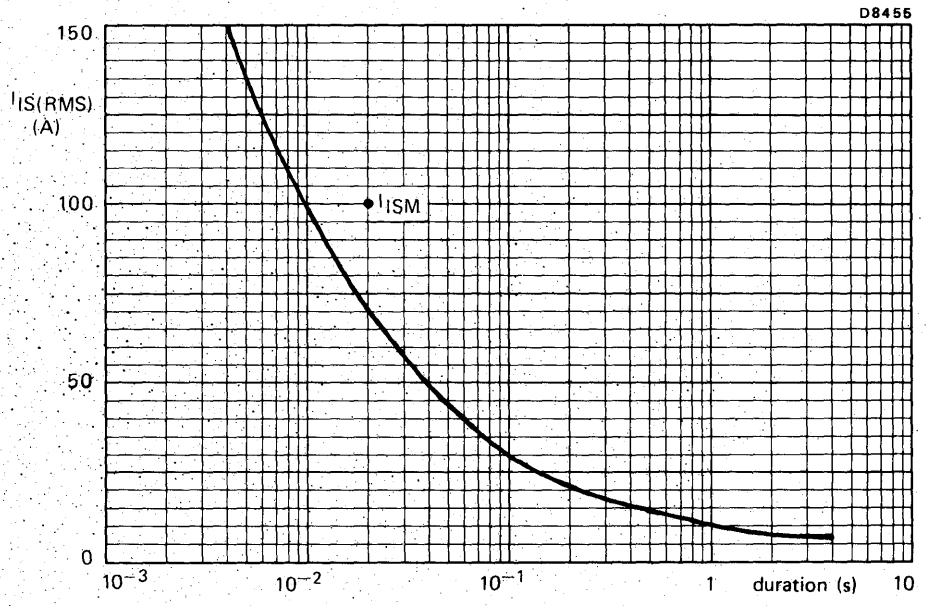
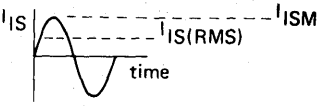


Fig.3 Maximum permissible non-repetitive r.m.s. input current based on sinusoidal currents (f = 50 Hz); T_j = 150 °C prior to surge, with reapplied V_{IWMmax}.



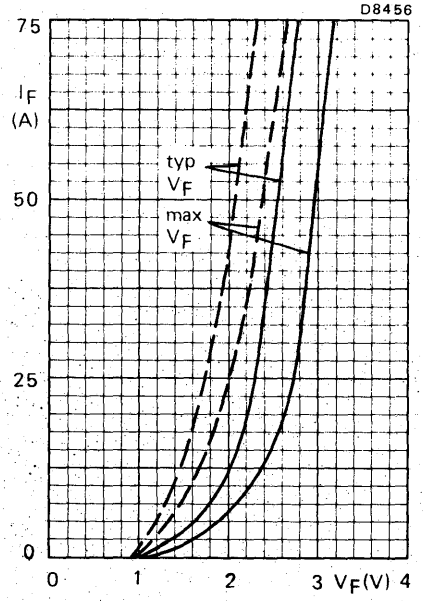
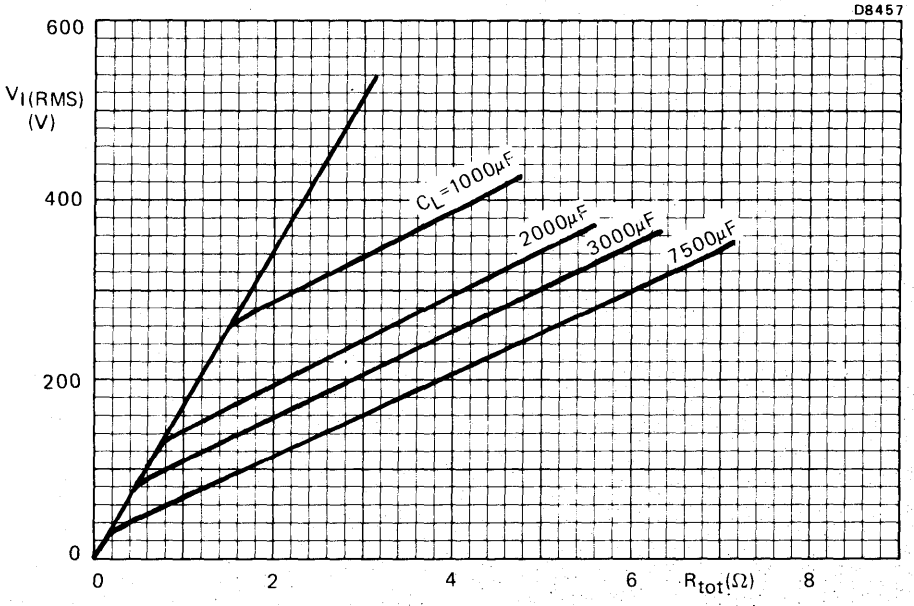
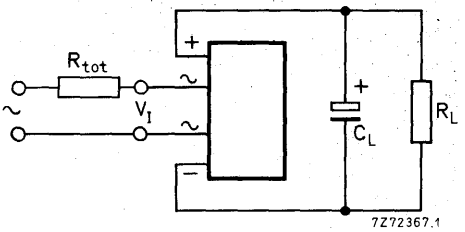


Fig.4 Two diodes in series;
——T_j = 25 °C; – – – –T_j = 150 °C





The graph takes the possibility of the following spreads into account:

mains voltage	+10%
capacitance	+50%
resistance	−10%

Fig.5 Minimum value of the total series resistance R_{tot} (including the transformer resistance) required to limit the peak inrush current.