SILICON DIFFUSED JUNCTION RECTIFIERS 50-400V PEAK REVERSE VOLTAGE

DD710 SERIES

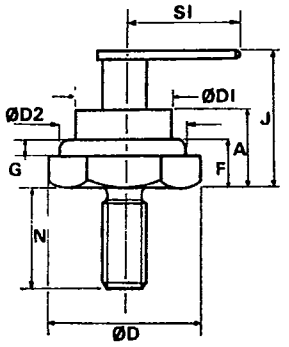
The DD710 series rectifiers are case rated, 35 ampere silicon diffused junction, stud mounted devices complying with BS SO-47 outline. The top connection is made to a male Lucar connector in accordance with BS AU151 Series 375.
They are designed for medium current rectifying applications and are particularly suitable for use in conjunction with preformed wiring harnesses to facilitate the making of electrical connections during equipment assembly.
The rectifiers are available with studs of either polarity, reverse polarity versions being denoted by the addition of the suffix A to the type number.

QUICK REFERENCE DATA

	DD710	DD711	DD713	DD716
V_{RRM} max.	50V	100V	200V	400V
$I_{F(AV)}$ max. at T_{stud} = 140°C		35A		
V_F max. at I_F = 35A and Tj = 25°C		1·05V		
I_R max. at V_R max. and Tj = 25°C		15 μA		

MECHANICAL DETAILS

Ref.	DIMENSIONS				Notes
	Millimetres		Inches		
	Min.	Max.	Min.	Max.	
A		14·73		0·580	
ØD		21·99		0·866	2
ØD1		14·48		0·570	
ØD2	18·85	18·97	0·742	0·747	
F	5·33	7·11	0·210	0·280	
G	0·71	2·41	0·028	0·095	
J	18·80	20·32	0·740	0·800	
N	12·19	13·20	0·480	0·520	3
S1		18·41		0·725	4, 5



Notes:
1. The rectifiers comply with BS SO-47 outline.
2. This zone has a $\frac{3}{4}$ in hexagon: 0·742 in (18·85mm) min. 0·750 in (19·05mm) max.
3. Thread $\frac{1}{4}$–28 UNF–2A.
4. Connector blade to BS AU151 Series 375.
5. The axis of the connector blade is oriented parallel to two hexagon flats.
6. The millimetre dimensions are derived from the inch dimensions.

Weight .. .. .. 26 grammes
Weight with nut and washer 29 grammes

In the interest of improved product design, changes to this specification may be made at any time.

LUCAS

RATINGS 81C 00016 D

T-01-19

The ratings quoted are limiting values of operating and environmental conditions and are in accordance with the absolute maximum rating system defined in BS 3494 (Part 1) and IEC Publication 134. They apply for the frequency range 50 Hz to 400 Hz. Simultaneous application of all ratings is implied unless otherwise stated.

Voltage Ratings

		DD710	DD711	DD713	DD716
V_{RWM}	Crest working reverse voltage	50V	100V	200V	400V
V_{RRM}	Repetitive peak reverse voltage	50V	100V	200V	400V
V_{RSM}	Non-repetitive peak reverse voltage (10 ms)	50V	100V	200V	400V
V_R	Continuous d.c. reverse voltage	50V	100V	200V	400V

Current Ratings

$I_{F(AV)}$	Mean forward current at T_{stud} = 140°C	35A
I_{FRM}	Repetitive peak forward current	200A
I_{FSM}	Non-repetitive peak forward overload current (1 cycle)	400A
	Switch-on surge peak forward current (10 ms time constant)	500A

Thermal Ratings

T_{amb}	Operating ambient temperature range	—55°C to + 150°C
T_{stg}	Storage temperature range	—55°C to + 150°C
Tj	Maximum junction temperature	175°C

CHARACTERISTICS

Electrical Characteristics

		Min.	Typ.	Max.
V_{AB}	Avalanche voltage at Tj = 25°C			
	DD710	50V		
	DD711	140V		
	DD713	260V		
	DD716	500V		
V_F	D.C. forward voltage at Tj = 25°C			
	I_F = 35A		0·92V	1·05V
	I_F = 100A		1·05V	
I_R	Reverse current at $V_R$max.			
	Tj = 25°C			15µA
	Tj = 150°C			1mA

Thermal Characteristics

$R_{th\ (j\text{-}stud)}$	Thermal resistance (junction to stud)			0·75 deg C/W

INSTALLATION NOTES

Maximum diameter of hole in heat sink .. .. 0·270 in (6·86 mm)

To ensure good thermal contact between the rectifier and heat sink:
(a) Remove all burrs from the edge of the heat sink clearance hole.
(b) Use a small amount of silicone grease between the rectifier and heat sink.
(c) Apply the correct torque to the nut on assembly.

Maximum torque .. .. 28 lbf in (3·14 Nm)
Minimum torque for good thermal contact .. .. 24 lbf in (2·69 Nm)

Rectifier polarity. Stud polarity is denoted by a conventional rectifier symbol on the rectifier case. Stud polarity is also indicated by the rectifier type number: anode stud rectifiers have a suffix A to their type numbers while cathode stud types do not have a suffix letter.

For applications which require the rectifier case to be electrically insulated from the heat sink, use insulating kit number 54006146.

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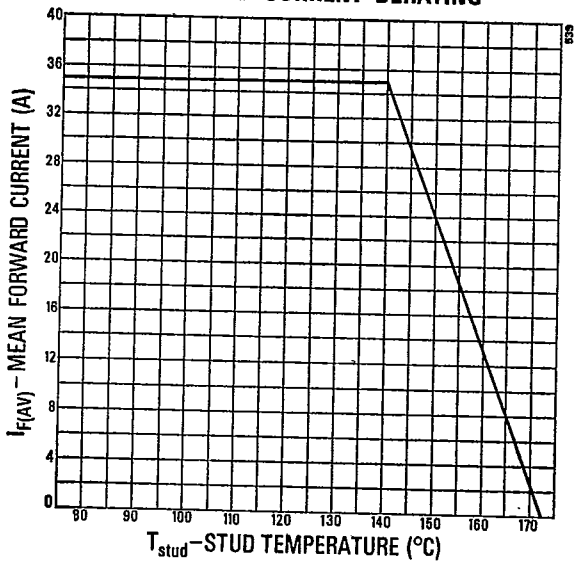
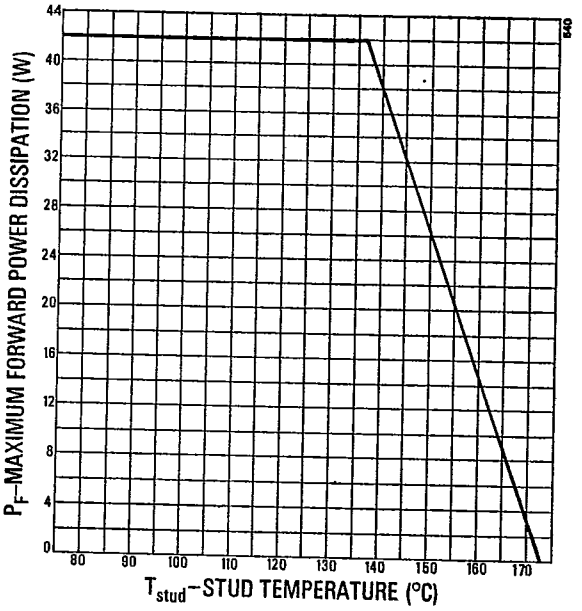
35A SILICON DIFFUSED JUNCTION RECTIFIERS **DD710**
50-400V PEAK REVERSE VOLTAGE **SERIES**

T-01-19

FORWARD CURRENT DERATING



POWER DERATING



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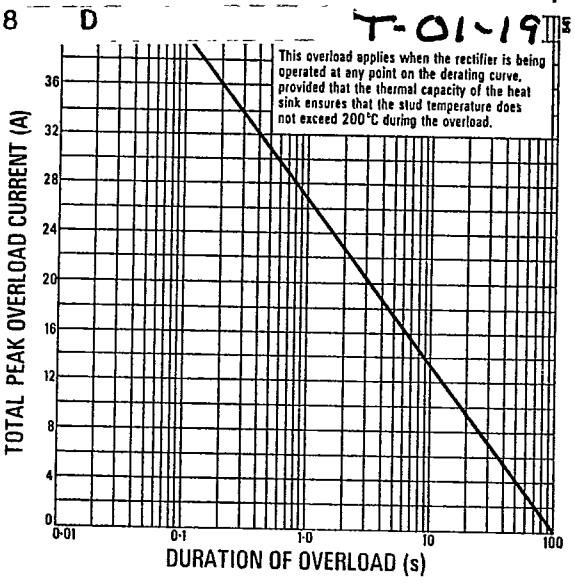
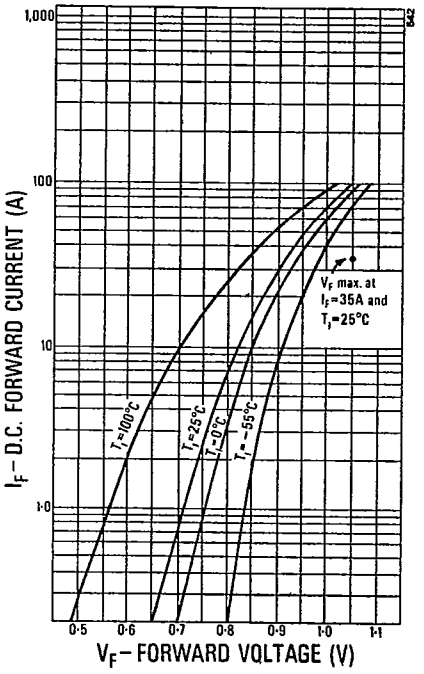
LUCAS

50 Hz A.C. OVERLOAD CURVE
(PEAK REPETITIVE REVERSE VOLTAGE APPLIED)

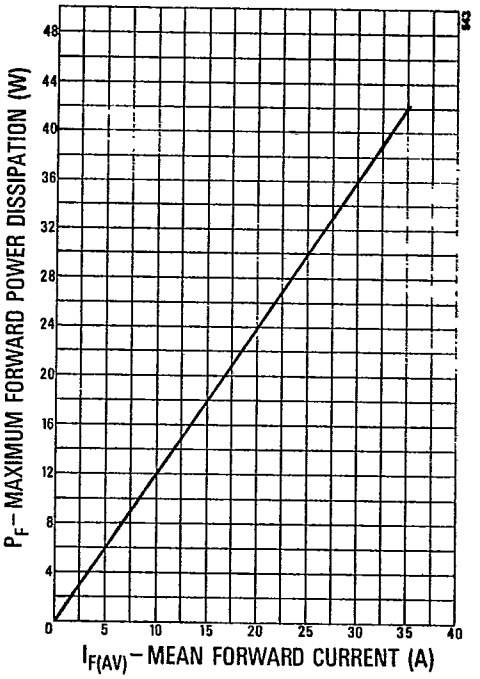
81C 00018 D T-01-19



TYPICAL ISOTHERMAL FORWARD CHARACTERISTICS



POWER LOSS AGAINST MEAN FORWARD CURRENT



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