

# LD06-E-41C

**SINGLE PHASE GLASS PASSIVATED  
SURFACE MOUNT FLAT BRIDGE RECTIFIER  
VOLTAGE: 600V CURRENT:0.6A**

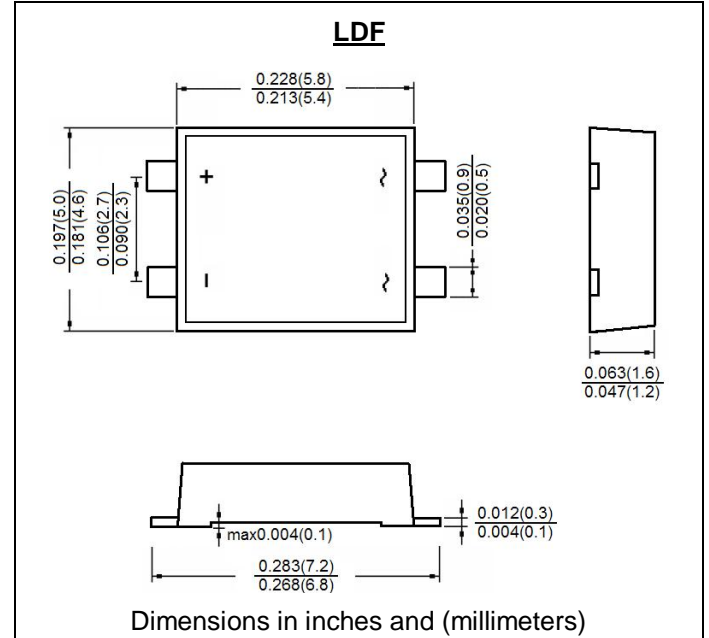


## FEATURE

Low profile space  
Ideal for automated placement  
Glass passivated chip junction  
Low forward voltage drop  
Low leakage current  
High forward surge capability  
High temperature soldering: 260°C/10 seconds  
Halogen Free

## MECHANICAL DATA

Terminal: Plated leads solderable per-J-STD-002  
Case:UL-94 Class V-0 recognized Halogen Free Epoxy  
Polarity: Polarity symbol marked on body



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(single-phase, half -wave, 60Hz, resistive or inductive load rating at 25°C, unless otherwise stated)

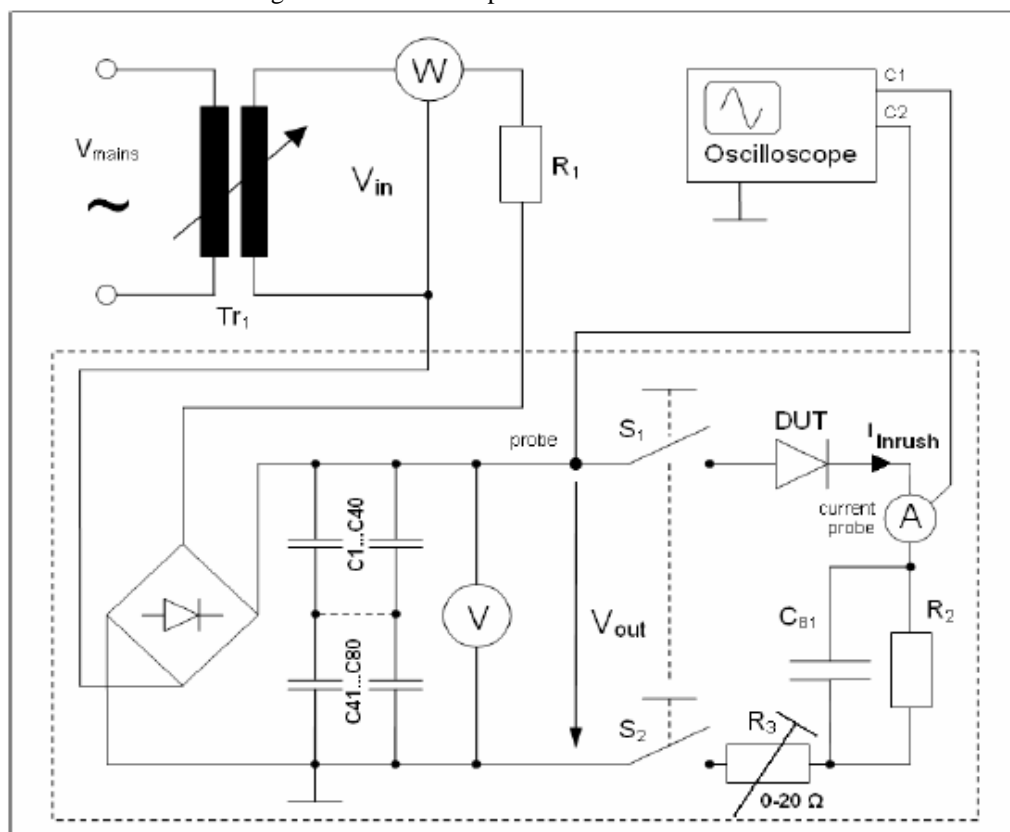
	SYMBOL	LD06-E-41C	Units
Maximum Recurrent Peak Reverse Voltage	Vrrm	600	V
Maximum RMS Voltage	Vrms	420	V
Maximum DC blocking Voltage	V <sub>DC</sub>	600	V
Maximum Average Forward Rectified Current at Ta =25°C	If(av)	0.6	A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	Ifsm	20	A
Maximum Instantaneous Forward Voltage at forward current 0.3A	Vf	1.0	V
Maximum Instantaneous Forward Voltage at forward current 0.3A at Tc=120°C	Vf	0.7	V
Maximum DC Reverse Current at rated DC blocking voltage Tc =25°C	Ir	5.0	µA
Maximum DC Reverse Current at rated DC blocking voltage Tc =120°C	Ir	100.0	µA
Maximum DC Reverse Current at V <sub>DC</sub> =325V and Tc =25°C	Ir	1.0	µA
Typical Thermal resistance (Note1)	Rth(ja) Rth(jc) Rth(jl)	70 45 20	°C/W
Typical Junction Capacitance (Note2)	Cj	13.0	pF
Electrostatic Discharge (Note3)	ESD	±2	kv
Storage and Operating Junction Temperature Range	Tstg, Tj	-55 to +150	°C

- Note:
1. On aluminum substrate P.C.B. with an area of 0.8"×0.8"(20×20mm) mounted on 0.05×0.05"(1.3×1.3mm) solder pad
  2. Measured at 1.0 MHz and applied voltage of 4.0 volt
  3. According to 1.4601.442-01 test circuit

## ELECTRICAL CHARACTERISTICS LD06-E-41C

parameters	application conditions	Min.	unit
repetitive inrush current capability	valid for whole temperature range and with 20uF foil capacitor and R3 placed in series to the DUT. Change the value of R3 to get the peak value of the first pulse to 33A. Adjust 10s between each pulse. $V_{out}=400V_{DC}$ . $I_{Inrush\ current}=33A$ . See Note 3	10000	cycles
	take new samples. valid for whole temperature range and with 20uF foil capacitor and R3 placed in series to the DUT. Change the value of R3 to get the peak value of the first pulse to 42A. Adjust 10s between each pulse. $V_{out}=500V_{DC}$ . $I_{Inrush\ current}=42A$ . See Note 3	5000	cycles
	take new samples. valid for whole temperature range and with 20uF foil capacitor and R3 placed in series to the DUT. Change the value of R3 to get the peak value of the first pulse to 50A. Adjust 10s between each pulse. $V_{out}=594V_{DC}$ . $I_{Inrush\ current}=50A$ . See Note 3	1000	cycles

Note 3: schematic diagram of the test setup inrush current



C1...C40 = 560µF /400V; approximately. 22mF in sum (C1...C40 in parallel). ESR C1...C40 ≤ 0,5R

C41...C80 = 560µF /400V; approximately. 22mF in sum (C41...C80 in parallel). ESR C41...C80 ≤ 0,5R

C81 = 20µF /600v foil capacitor. ESR C81 ≤ 0,1R

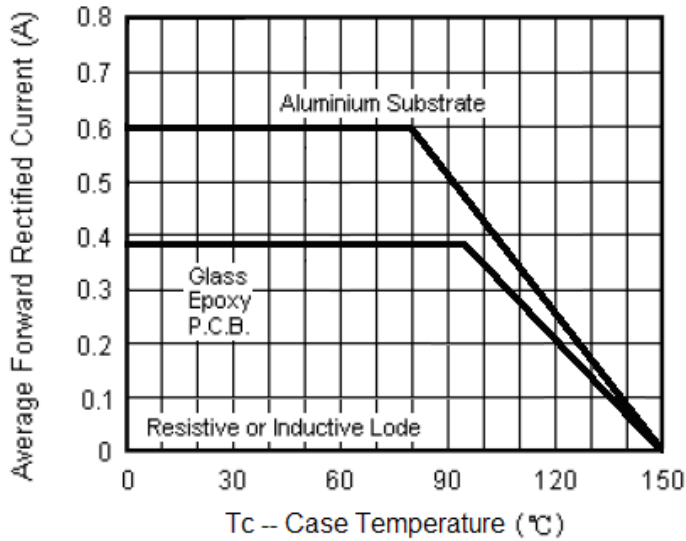
R1 = 80R0 /50W (4 x 20R /50W in series) protection resistor for the rectifiers

R2 = 50k / 10W / 600V discharge resistor for C81

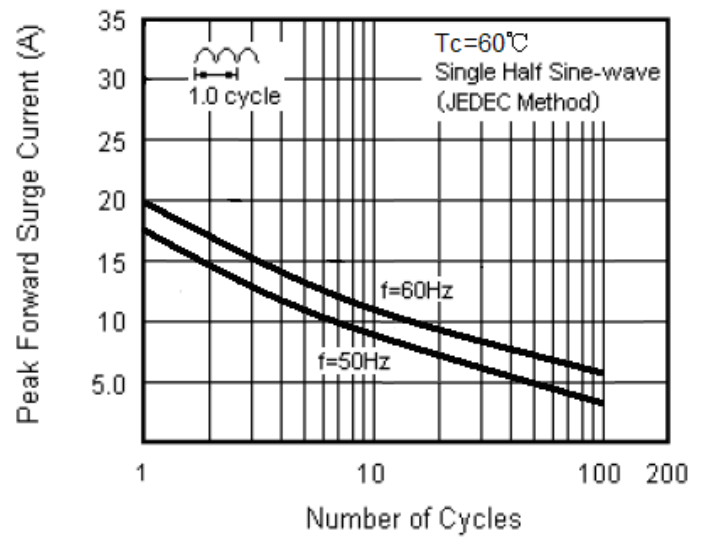
R3 = 0 - 20Ω / 30W current limiter ( low inductive, repetitive peak maximum working voltage 600V )

S1, S2 = Switch (Relays); Siemens 3TF46 (3 phases switch connected in parallel)  $I_{max(rms)}= 80A$ ; 600Vac;  $I_s= 50kA$ ; 690Vac; s=short-circuited;

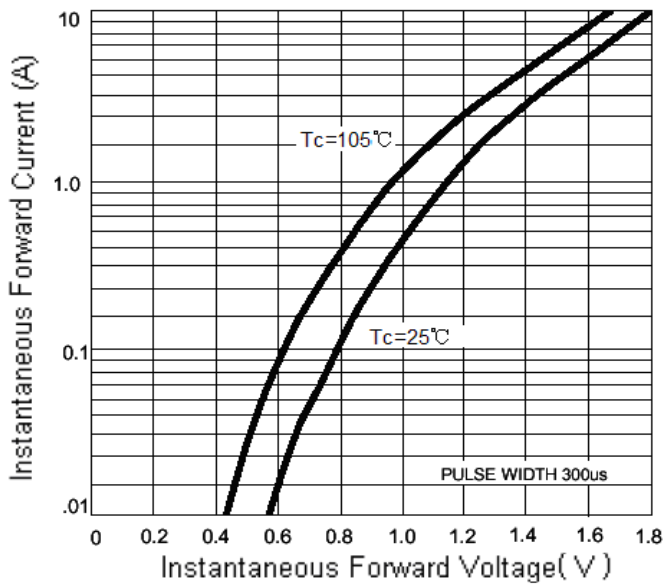
**Fig.1 Derating Curve For Output Rectified Current**



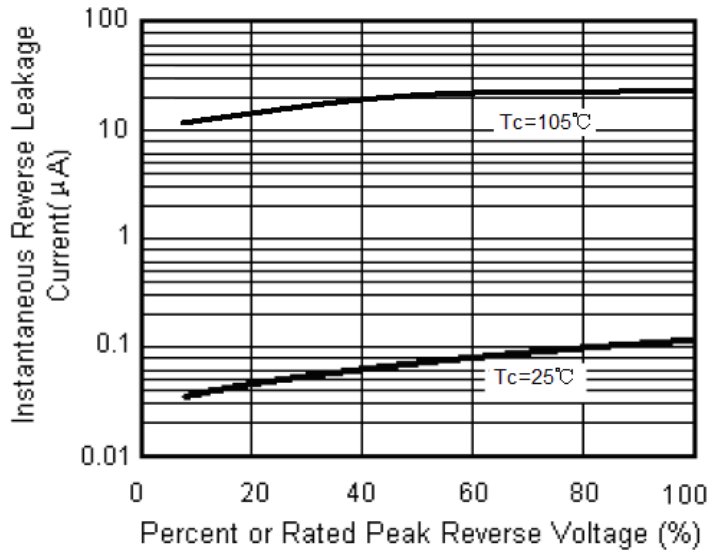
**Fig.2 Maximum Non-Repetitive Peak Forward Surge Current Per Leg**



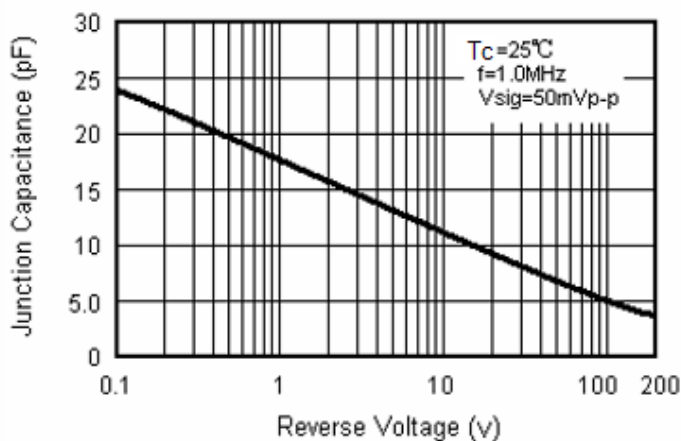
**Fig.3 Typical Forward Voltage Characteristics Per Leg**



**Fig.4 Typical Reverse Leakage Characteristics Per Leg**



**Fig.5 Typical Junction Capacitance Per Leg**



1. According to 1.4601.442-01 test circuit, ESD Test of LD06-E at 600Vdc passed with the immunity capability of  $\pm 2\text{KV}$

2. Description of test method & conditions

Setup:

Test voltages for DUT: max specified DC blocking voltage.

ESD test level for Contact discharge:

10 Impulses at each test level and output polarity.

Test level:  $\pm 1, \pm 2\text{KV}$

Test criteria: No faults are allowed.

Ambient temperature:  $25^\circ\text{C}$  Relative humidity : 55%

Specification: ESD Generator according to IEC 61000-4-2

Test circuit:

