

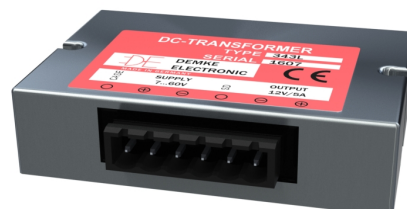
## DC-Transformer Type 343L-12-SD

Article number 343.002

### **60 Watt, single output dc converter**

#### General

- » 1 : 6.2 input voltage range from 7 VDC up to 60 VDC
- » Peak efficiency 90%
- » Continuous no load and short circuit proof
- » Input and output galvanically isolated
- » Very low input ripple
- » Integrated EMI input and output filter
- » No external circuitry required
- » For ambient temperatures up to +85°C
- » Thermal shutdown at 90°C
- » Electromagnetic emission EN 55022 < A
- » No derating
- » Metal case sized 77 × 52 × 19 mm



#### Description

The DC Transformer 343L-12-SD stands out to its low noise and very high efficiency, making it to a superior power supply in high end applications with different voltage buses. The transformer 343L-12-SD is a member of the 300-series push-pull power converter. The transformer includes a **softstart**, an **input undervoltage lockout** and a **permanent short circuit protection** to ensure efficient module protection. The soft start allows current limitation and eliminates inrush current during start up. Since the transformer is voltage and current regulated, the module passes into constant current mode, when an overload or even a short circuit is applied. This feature makes this transformer unique in limiting the maximum output power. The device immediately restores to normal operation when the overload is removed and is able to deliver the full output power within the specified temperature range.

#### 343 series types

Standard Types	Input voltage range / VDC	Output	
		VDC / VDC	IDC / A
343-vv-sd	12 ... 60		
343L-12-SD	7 ... 60	12	5

vv - replace vv by a desired output voltage  
sd - replace sd by SD for shut down option

nominal input voltage = 24 VDC

**Modifications are available upon request!**

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### Electrical specifications

Characteristic	Symbol	Conditions	min	typ	max	Unit
Input voltage range	$U_i$	$I_{oNom}$	7	24	60	VDC
Input startup voltage	$U_{Start}$	$I_o = 100mA$		8.8		VDC
Undervoltage lockout	$U_{UVLO}$		6.4			VDC
max. Input surge voltage	$U_{i, Surge}$		$I_{oNom}$			63
Output voltage	$U_o$	$U_{iNom}, I_{oNom}$	11.8	12	12.2	VDC
max. Output current	$I_{o, max}$	$U_{iNom}$			5.0	A
max. Input current	$I_{i, max}$		t.b.d.			
No load input current	$I_{iNL}$	$U_{iNom}, I_o = 0$		29		mA
Input current in shutdown condition	$I_{iSD}$		0.72			
min. load to obtain specified output voltage	$L_{min}$	$U_{iNom}$	t.b.d.			%
Initial switch on time	$t_{on}$			10		ms
SoftStart ramp-up-time	$t_{SS}$			5		ms
Output voltage overshoot at initial switch-on	$U_{OOs}$			t.b.d.		mV
Input current overshoot at initial switch-on	$I_{OOs}$	$U_{iNom}, I_{oNom}$		80		%
Reflected ripple current at the input <sup>(1)</sup>	$I_{IRR}$			t.b.d.		mA
Generated ripple at the line voltage @20MHz <sup>(2)</sup>	$\Delta U_{iR}$			95		mV
Generated noise at the line voltage @20MHz <sup>(2)</sup>	$\Delta U_{iN}$			30		mV
Switching frequency	$f_{sw}$			140		kHz
Output voltage ripple @20MHz	$\Delta U_{OR}$	$U_{iNom}, I_{oNom}$		10		mV
Output voltage noise @20MHz	$\Delta U_{ON}$		160			
Output voltage accuracy	$\Delta U_o$	$U_{iMin} .. U_{iMax}$ $I_{oMin} .. I_{oMax}$		2		%
Static line regulation	$\Delta U_{iL}$	$U_{iMin} .. U_{iMax}$ $I_{oNom}$		0.1		%
Static load regulation	$\Delta U_{oL}$	$U_{iNom}$ $I_o=(0 .. 1)*I_{oNom}$		1.7		%
Dynamic load regulation <sup>(3)</sup>	$t_d$	$U_{iMin} .. U_{iMax}$ $I_o=(0.1 .. 0.9)*I_{oNom}$		0.9		ms
Efficiency	$\eta$	$U_{iNom}, I_{oNom}$ $U_{iNom}, 0.5*I_{oNom}$		89.5 90.3		%
Maximum admissible capacitive load	$C_{oExt}$	$U_{iNom}, I_{oNom}$			infinite	$\mu F$
Mean Time To Failure	MTTF	SN29500 @ 70°C		t.b.d.		h

Table 2 - Electrical input and output data

Test conditions, unless otherwise noted:  
 $U_{iNom} = 24$  VDC and full load,  $T_a = 25^\circ C$   
 all measurements without external components

(1) measured with a current probe (Tek -TCPA300)

(2) measured directly at the input/output pins with no external filter (Yokogawa DL9040)

(3) load jump performed with Electronic Load (Keisoku Giken ELA305)

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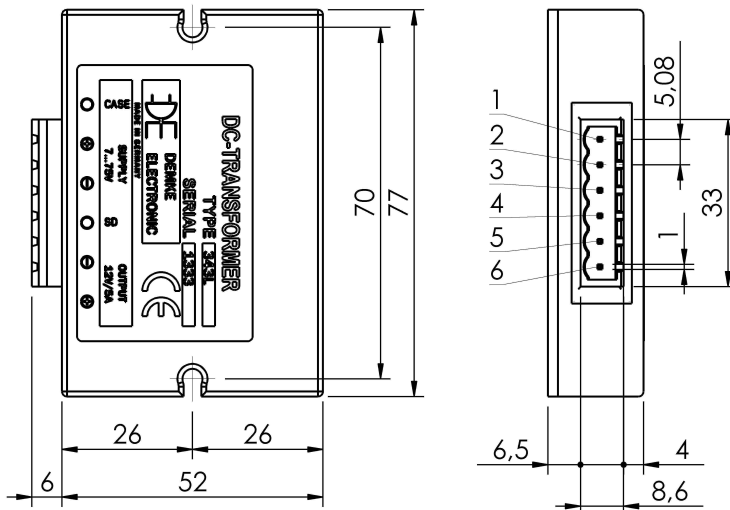
### Thermal characteristics

Characteristic	Symbol	min	max	Unit
Ambient temperature	T <sub>A</sub>	-40	85	°C
max. case temperature (before thermal shutdown)	T <sub>Cmax</sub>		90	°C
storage temperature (device not in operation)	T <sub>S</sub>	-40	65	°C
maximum relative humidity during storage	RH		75	%
max. storage time under worst conditions	t <sub>Smax</sub>		25	d

### Electromagnetic interference compliance

Norm	Description	satisfied
EN 55022	EN 55022 < A	yes
EN 61000-4-2	Electrostatic discharge immunity	yes
EN 61000-4-3	electromagnetic field immunity	yes
EN 61000-4-4	fast transient/burst immunity	yes
EN 61000-4-5	Surge immunity	yes
EN 61000-6-4	Emission standard for industrial environments	yes

### Mechanical data and connections



Pin	Symbol	Function
1	C	Case
2	Vi+	Input voltage positive
3	Vi-	Input voltage negative
4	SD	Shut Down <sup>(*)</sup>
5	Vo-	Output voltage negative
6	Vo+	Output voltage positive

<sup>(\*)</sup> connect SD to Vi- to disable transformer

77 × 52 × 19 mm full metal case

connector: COMBICON CCA 2,5/6-G-5,08 P26THR - 6 pins, 5,08mm pitch

dimensions in mm