



3

YEARS
WARRANTY

ROHS
COMPLIANT

REACH
COMPLIANT



Automation



Datacom



IPC



Industry



Measurement



Telecom



Automobile



Boat



Charger



Medical



PV



Railway



PART NUMBER STRUCTURE

DUR01 -	05	S	05
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)
*EOL Modules:	33:3.0~3.6	S:Single	33:3.3
DUR01-33S33	05:4.5~5.5		05:5
DUR01-33S15	09:8.1~9.9		09:9
DUR01-12S33	12:10.8~13.2		12:12
DUR01-24S33	15:13.5~16.5		15:15
DUR01-24S15	24:21.6~26.4		

※NRND: Not recommended for new designs

TECHNICAL SPECIFICATION All specifications are typical at nominal input, full load and 25°C unless otherwise noted

Model Number	Input Range VDC	Output Voltage VDC	Output Current		Input Current @ No Load mA	Efficiency %	Maximum Capacitor Load μF
			@ Min. Load mA	@ Full Load mA			
DUR01-33S33*	3.0 ~ 3.6	3.3	30.3	303	42	68	150
DUR01-33S05	3.0 ~ 3.6	5	20	200	38	70	100
DUR01-33S09	3.0 ~ 3.6	9	11.1	111	45	71	22
DUR01-33S12	3.0 ~ 3.6	12	8.4	84	45	72	47
DUR01-33S15*	3.0 ~ 3.6	15	6.6	66	45	75	33
DUR01-05S33	4.5 ~ 5.5	3.3	30.3	303	25	68	150
DUR01-05S05	4.5 ~ 5.5	5	20	200	25	70	100
DUR01-05S09	4.5 ~ 5.5	9	11.1	111	25	74	22
DUR01-05S12	4.5 ~ 5.5	12	8.4	84	25	78	47
DUR01-05S15	4.5 ~ 5.5	15	6.6	66	24	80	33
DUR01-09S09	8.1 ~ 9.9	9	11.1	111	20	74	22
DUR01-12S33*	10.8 ~ 13.2	3.3	30.3	303	14	68	150
DUR01-12S05	10.8 ~ 13.2	5	20	200	10	70	100
DUR01-12S09	10.8 ~ 13.2	9	11.1	111	13	74	22
DUR01-12S12	10.8 ~ 13.2	12	8.4	84	14	78	47
DUR01-12S15	10.8 ~ 13.2	15	6.6	66	13	80	33
DUR01-15S33	13.5 ~ 16.5	3.3	30.3	303	9	68	150
DUR01-15S05	13.5 ~ 16.5	5	20	200	9	70	100
DUR01-15S09	13.5 ~ 16.5	9	11.1	111	9	74	22
DUR01-15S12	13.5 ~ 16.5	12	8.4	84	8	78	47
DUR01-15S15	13.5 ~ 16.5	15	6.6	66	9	80	33
DUR01-24S33*	21.6 ~ 26.4	3.3	30.3	303	6	70	150
DUR01-24S05	21.6 ~ 26.4	5	20	200	6	70	100
DUR01-24S09	21.6 ~ 26.4	9	11.1	111	6	74	22
DUR01-24S12	21.6 ~ 26.4	12	8.4	84	5	78	47
DUR01-24S15*	21.6 ~ 26.4	15	6.6	66	6	80	33

*The End of Life (EOL) Modules. For detailed information please contact P-DUKE.

※NRND: Not recommended for new designs

INPUT SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating input voltage range	3.3Vin(nom)	3.0	3.3	3.6	VDC
	5Vin(nom)	4.5	5	5.5	
	9Vin(nom)	8.1	9	9.9	
	12Vin(nom)	10.8	12	13.2	
	15Vin(nom)	13.5	15	16.5	
	24Vin(nom)	21.6	24	26.4	
Input filter	C type				

OUTPUT SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Voltage accuracy		-5.0		+5.0	%
Line regulation	Low Line to High Line at Full Load	3.3Vout, 5Vout Others	1.3%,max / 1% of Vin 1.2%,max / 1% of Vin		
Load regulation	10% to 100% Load	-15 -10		+15 +10	%
Ripple and noise	Measured by 20MHz bandwidth		100		mVp-p
Temperature coefficient		-0.1		+0.1	%/°C
Short circuit protection			1 Second, max.		

GENERAL SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Isolation voltage	1 minute	1000			VDC
Isolation resistance	500VDC	1			GΩ
Isolation capacitance				80	pF
Switching frequency			90		kHz
Safety meets				IEC/ EN/ UL62368-1	
Case material				Non-conductive black plastic	
Base material				None	
Potting material				Epoxy (UL94 V-0)	
Weight				1.5g (0.053oz)	
MTBF	MIL-HDBK-217F, Full load			9.850 x 10 ⁵ hrs	

ENVIRONMENTAL SPECIFICATIONS

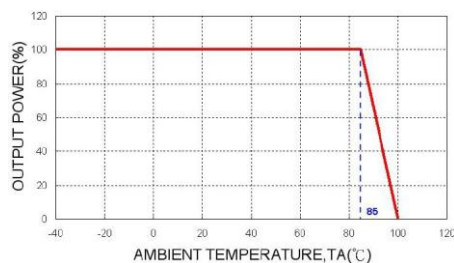
Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating ambient temperature	Without derating	-40		+85	°C
Maximum case temperature				100	°C
Storage temperature range		-55		+125	°C
Thermal shock				MIL-STD-810F	
Vibration				MIL-STD-810F	
Relative humidity				5% to 95% RH	

Note:

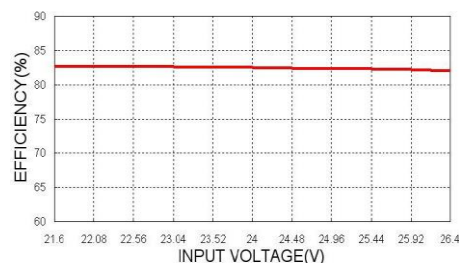
- The output requires a minimum loading on the output to maintain specified regulation. Operation under no-load condition will not damage these devices; however they may not meet all listed specification.

CAUTION: This power module is not internally fused. An input line fuse must always be used.

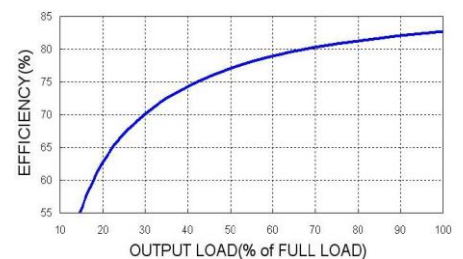
CHARACTERISTIC CURVE



DUR01-24S12 Derating Curve



DUR01-24S12 Efficiency vs. Input Voltage



DUR01-24S12 Efficiency vs. Output Load

FUSE CONSIDERATION

This power module is not internally fused. An input line fuse must always be used.

This encapsulated power module can be used in a wide variety of applications, ranging from simple stand-alone operation to an integrated part of sophisticated power architecture.

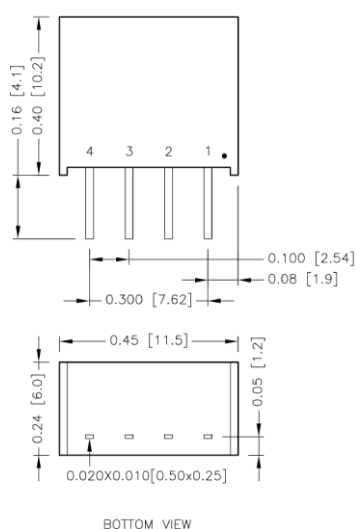
To maximum flexibility, internal fusing is not included; however, to achieve maximum safety and system protection, always use an input line fuse.

The input line fuse suggest as below :

Model	Fuse Rating (A)	Fuse Type
DUR01-33□□□	0.8	Slow-Blow
DUR01-05□□□	0.5	Slow-Blow
DUR01-09□□□、DUR01-12□□□	0.315	Slow-Blow
DUR01-15□□□、DUR01-24□□□	0.16	Slow-Blow

The table based on the information provided in this data sheet on inrush energy and maximum DC input current at low Vin.

MECHANICAL DRAWING

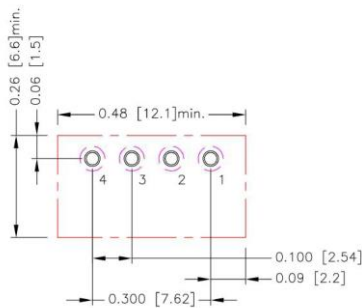


PIN CONNECTION

PIN	DEFINE
1	-Vin
2	+Vin
3	-Vout
4	+Vout

- All dimensions in Inch [mm]
Tolerance: X.XX±0.02 [X.X±0.5]
X.XXX±0.01 [X.XX±0.25]
- Pin dimension tolerance ±0.004 [0.10]

RECOMMENDED PAD LAYOUT



All dimensions in inch[mm]
Pad size(lead free recommended)
Through hole 1.2.3.4:Φ0.031[0.80]
Top view pad 1.2.3.4:Φ0.039[1.00]
Bottom view pad 1.2.3.4:Φ0.063[1.60]

THERMAL CONSIDERATIONS

The power module operates in a variety of thermal environments. However, sufficient cooling should be provided to help ensure reliable operation of the unit. Heat is removed by conduction, convection, and radiation to the surrounding Environment. Proper cooling can be verified by measuring the point as the figure below. The temperature at this location should not exceed "Maximum case temperature". When Operating, adequate cooling must be provided to maintain the test point temperature at or below "Maximum case temperature". You can limit this Temperature to a lower value for extremely high reliability.

- Thermal test condition with vertical direction by natural convection (20LFM).

