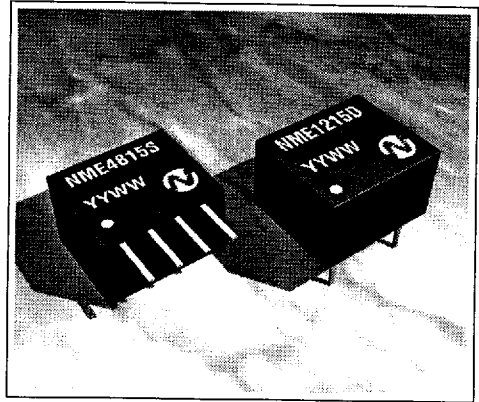


**features**

- Single Isolated Output
- 1kVDC Isolation
- Pin Compatible with LME & NML
- SIP & DIP Package Styles
- Efficiency to 75%
- Power Density 1.45W/cm<sup>3</sup>
- 3.3V, 5V, 12V, 15V, 24V & 48V Input
- 3.3V, 5V, 9V, 12V and 15V Output
- Footprint from 0.69 cm<sup>2</sup>
- UL94-V0 Package
- No Heatsink Required
- Internal SMD Construction
- Toroidal Magnetics
- Fully Encapsulated
- No External Components Required
- MTTF up to 3.2 Million Hours
- PCB Mounting
- Custom Solutions Available

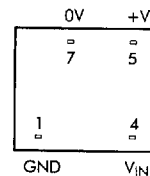
**description**

The NME Series of DC-DC Converters is particularly suited to isolating and/or converting DC power rails. The galvanic isolation allows the device to be configured to provide an isolated negative rail in systems where only positive rails exist.

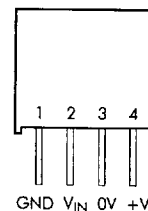


**pin connections**

8 Pin DIP (top view)



4 Pin SIP



# NME SERIES

## Isolated 1W Single Output

### absolute maximum ratings over operating free air\* temperature range

Input voltage $V_{IN}$ NME03 types . . . . .	5V
Input voltage $V_{IN}$ NME05 types . . . . .	7V
Input voltage $V_{IN}$ NME12 types . . . . .	15V
Input voltage $V_{IN}$ NME24 types . . . . .	28V
Input voltage $V_{IN}$ NME48 types . . . . .	54V
Output power total, NME03 types . . . . .	500mW
Output power total, NME05, 12, 24 and 48 types . . . . .	1W
Short-circuit duration . . . . .	1s
Isolation voltage (flash tested for 1 second) . . . . .	1000VDC
Operating free air temperature range . . . . .	0°C to 70°C <sup>1</sup>
Storage temperature range . . . . .	-55°C to 150°C
Lead temperature 1.5mm from case for 10 seconds . . . . .	300°C

### electrical specifications

(measured at  $T_A=25^\circ\text{C}$ , at nominal input voltage)

Input voltage range NME03 types . . . . .	3.3V±10%
Input voltage range NME05 types . . . . .	5V±10%
Input voltage range NME12 types . . . . .	12V±10%
Input voltage range NME24 types . . . . .	24V±10%
Input voltage range NME48 types . . . . .	48V±10%
Load voltage regulation (10% to 100% full load)	
3.3V and 5V output types . . . . .	15% max.
9V, 12V and 15V output types . . . . .	10% max.
Line voltage regulation (10% to 100% full load) . . . . .	1.2%/1% of $V_{IN}$
Output voltage accuracy . . . . .	See tolerance envelope graph
Input reflected ripple(20MHz Band limited)	
NME03 types . . . . .	100mV p-p max.
NME05, 12, 24 and 48 types . . . . .	90mV p-p max.
Output ripple (20MHz Band limited) . . . . .	150mV p-p max.
Insulation resistance at 500VDC . . . . .	1000 MΩ min.
Efficiency at full load, 3.3V and 5V output types . . . . .	70% typical 65% min.
Efficiency at full load, 9V, 12V and 15V output types . . . . .	75% typical 70% min.

\* Free air – requires a minimum of 10mm air space around the component. <sup>1</sup> See derating curve.

### electrical specifications

(measured at  $T_A=25^{\circ}\text{C}$ , at nominal input voltage)

Temperature drift ( $V_{OUT}$ ) . . . . .	0.03% per $^{\circ}\text{C}$ max.
Temperature rise above ambient at full load . . . . .	20 $^{\circ}\text{C}$ max.
Weight SIP types (typical) . . . . .	1.4 grams
Weight DIP types (typical) . . . . .	1.5 grams
Switching frequency at full load (typical) . . . . .	100kHz
No load power consumption (typical), NME03 types . . . . .	75mW
No load power consumption (typical), NME05, 12, 24 and 48 types . . . . .	100mW

### selection guide

#### 3.3V input types

Part Number	Output Voltage (V)	Output Current (mA)	Package Style
NME0305D	5	100	1
NME0309D	9	56	
NME0312D	12	42	
NME0315D	15	34	
NME0305S	5	100	3
NME0309S	9	56	
NME0312S	12	42	
NME0315S	15	34	

#### NME0503

Part Number	Output Voltage (V)	Output Current (mA)	Package Style
NME0503D	3.3	154	1
NME0503S			3

# NME SERIES

## Isolated 1W Single Output

### selection guide

#### 5V, 12V and 24V input types

Part Number	Output Voltage (V)	Output Current (mA)	Package Style
NMEXX05D	5	200	1
NMEXX09D	9	110	
NMEXX12D	12	84	
NMEXX15D	15	67	
NMEXX05S	5	200	3
NMEXX09S	9	110	
NMEXX12S	12	84	
NMEXX15S	15	67	

#### 48V input types

Part Number	Output Voltage (V)	Output Current (mA)	Package Style
NME4805D	5	200	2
NME4809D	9	110	
NME4812D	12	84	
NME4815D	15	67	
NME4805S	5	200	4
NME4809S	9	110	
NME4812S	12	84	
NME4815S	15	67	

# NME SERIES

## Isolated 1W Single Output

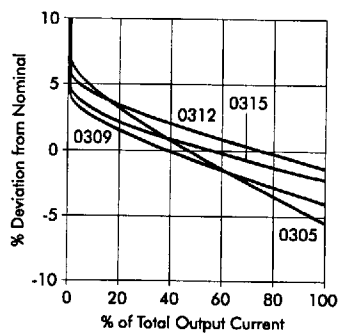
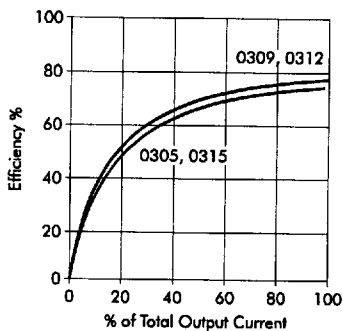
### typical isolation capacitance (pF)

Part Number	Output Voltage (V)				
	3.3	05	09	12	15
NME03XXX	-	21	23	25	25
NME05XXX	21	24	32	26	32
NME12XXX	-	33	51	59	61
NME24XXX	-	40	59	78	79
NME48XXX	-	32	50	76	75

Note : All data taken at  $T_A=25^\circ\text{C}$ .

### typical characteristics

#### NME03 series



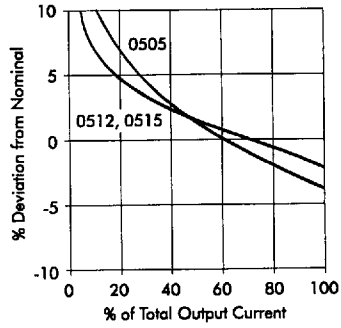
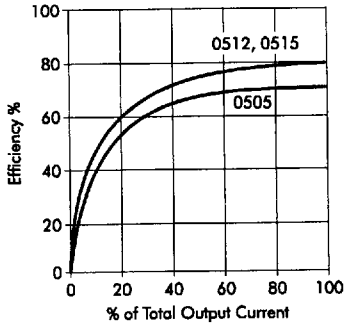
Note : All data taken at  $T_A=25^\circ\text{C}$ .

# NME SERIES

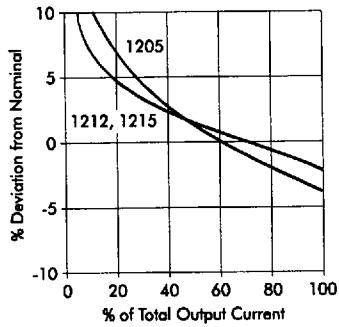
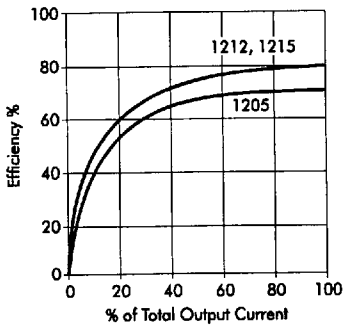
## Isolated 1W Single Output

### typical characteristics

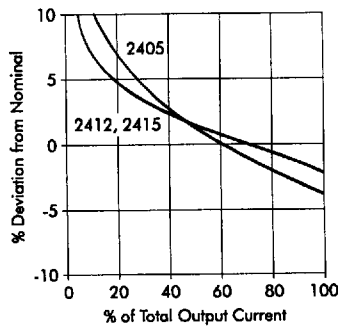
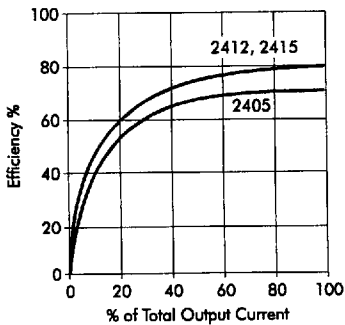
#### NME05 series



#### NME12 series



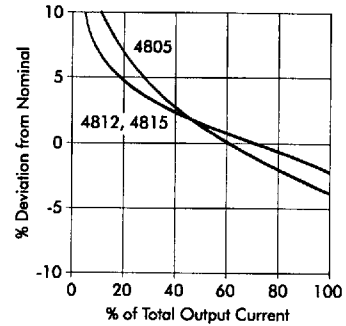
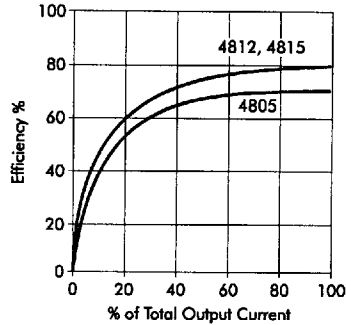
#### NME24 series



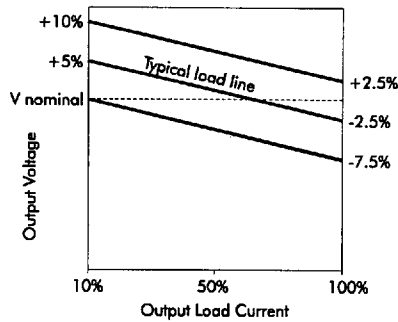
Note : All data taken at  $T_A=25^{\circ}\text{C}$ .

### typical characteristics

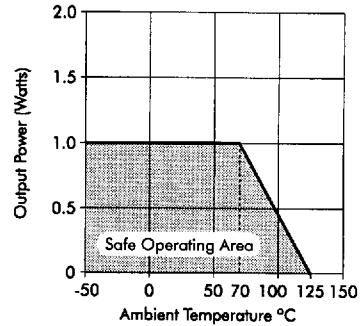
#### NME48 series



### tolerance envelope

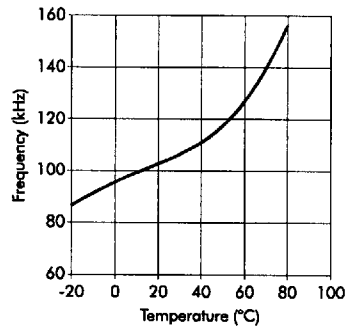


### temperature derating graph



See application notes on page 2-114

### temperature test (under full load)



Note : All data taken at  $T_A=25^\circ\text{C}$ .

# NME SERIES

## Isolated 1W Single Output

mean time to failure (MTTF) in thousands of hours

Part Number	-25°C	25°C	70°C
NME0305	3290	2761	2312
NME0309	1459	1249	1076
NME0312	759	655	571
NME0315	424	367	321
NME0503	3176	2693	2250
NME0505	2656	2265	1915
NME0509	1319	1137	984
NME0512	720	623	544
NME0515	411	357	313
NME1205	619	535	466
NME1209	501	434	379
NME1212	380	330	289
NME1215	272	236	208
NME2405	231	201	176
NME2409	213	185	102
NME2412	187	163	143
NME2415	157	136	120
NME4805	246	213	187
NME4809	224	194	171
NME4812	195	164	149
NME4815	161	140	123

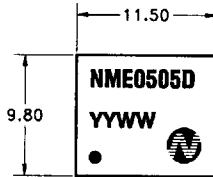
Note : MTTF figures derived from hybrid model of MIL-HDBK-217F.



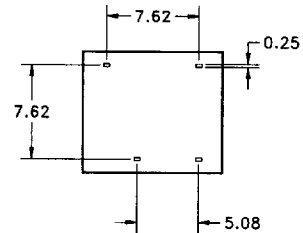
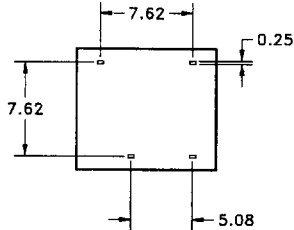
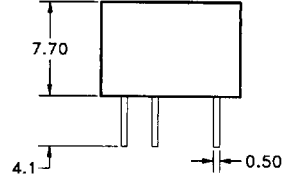
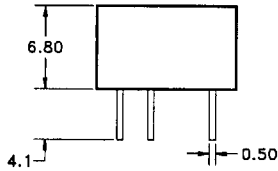
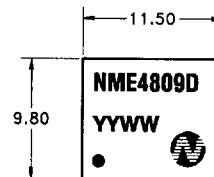
### outline dimensions

#### 8 Pin DIP package styles

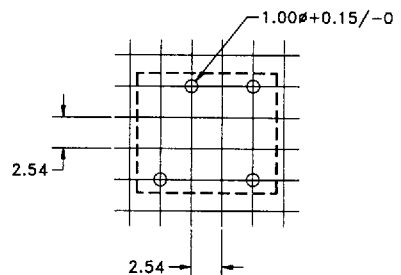
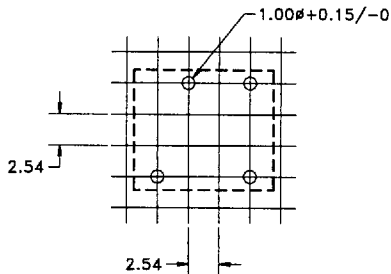
1



2



### recommended footprint details



All pins on a 2.54mm pitch.

All dimensions in mm  $XX.X \pm 0.50$ ,  $XX.XX \pm 0.25$

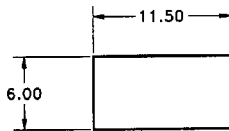
# NME SERIES

## Isolated 1W Single Output

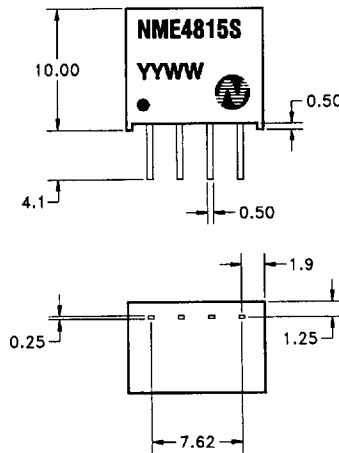
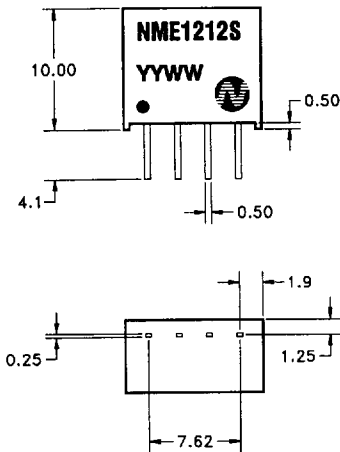
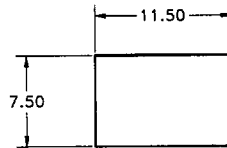
### outline dimensions

#### 4 Pin SIP package styles

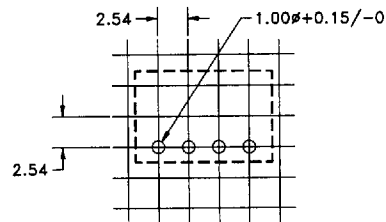
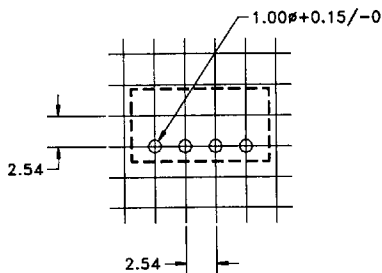
3



4



### recommended footprint details



All pins on a 2.54mm pitch.

All dimensions in mm XX.X  $\pm 0.50$ , XX.XX  $\pm 0.25$



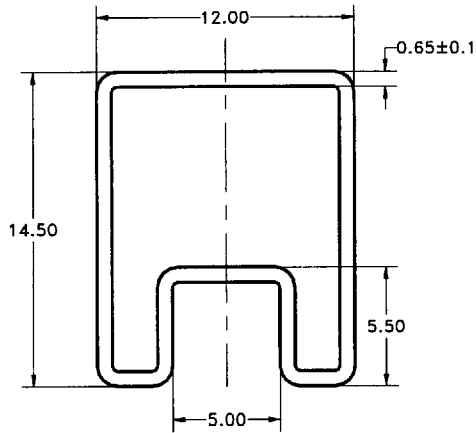
Part Number	Tube Style	Quantity per Tube
LMEXXXD	1	35
LMEXXXS	2	35
NMAXXXD	1	25
NMAXXXS	2	25
NMDXXD	1	25
NMDXXS	2	25
NMEXXXD	1	35
NMEXXXS	2	35
NMEXXXTM	4	35
NMFXXD	1	25
NMFXXM	3	35
NMFXXS	2	25
NMHXXD	1	25
NMHXXS	2	25
NMLXXS	2	28
NMSXXX	5	15
NMVXXD(A)	1	25
NMVXXS(A)	2	25
NMXDXXXSO	6	12
NMXSXXXSO	6	12
NMXDXXXU	6	19
NMXSXXXU	6	19

# PACKAGING DETAILS

## Outline Dimensions and Quantities

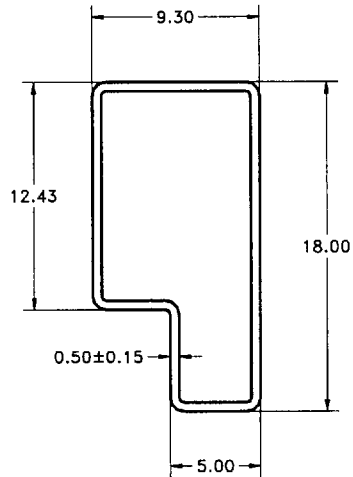
1

tube length =  $530\text{mm} \pm 2.00\text{mm}$



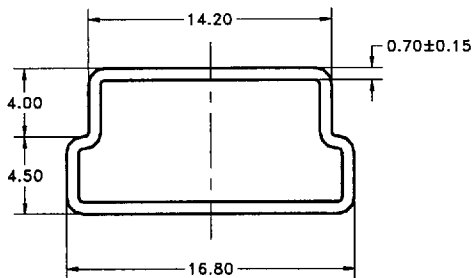
2

tube length =  $520\text{mm} \pm 2.00\text{mm}$



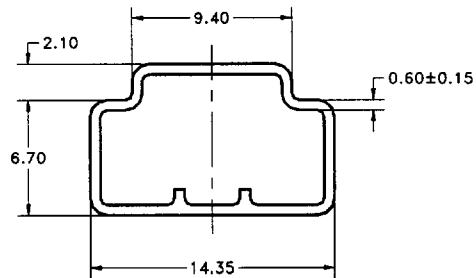
3

tube length =  $475\text{mm} \pm 2.00\text{mm}$



4

tube length =  $475\text{mm} \pm 2.00\text{mm}$



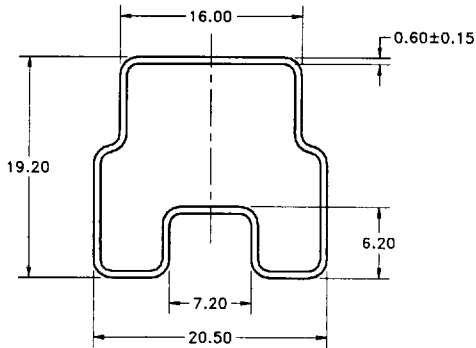
All dimensions in mm  $XX.XX \pm 0.50$

# PACKAGING DETAILS

## Outline Dimensions and Quantities

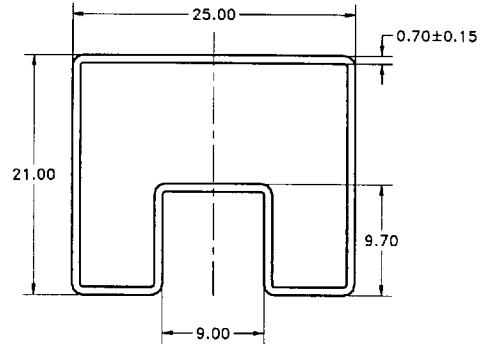
5

tube length = 520mm±2.00mm



6

tube length = 520mm±2.00mm



All dimensions in mm XX.XX±0.50

