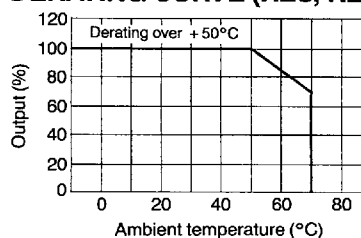


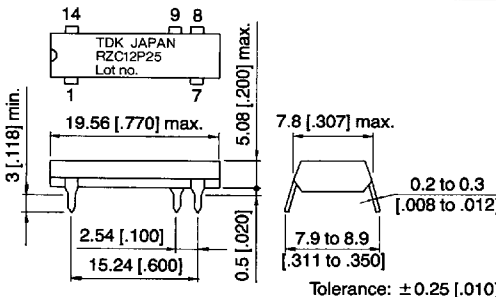
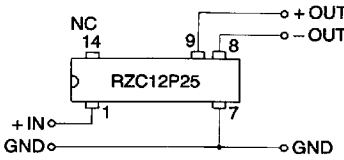
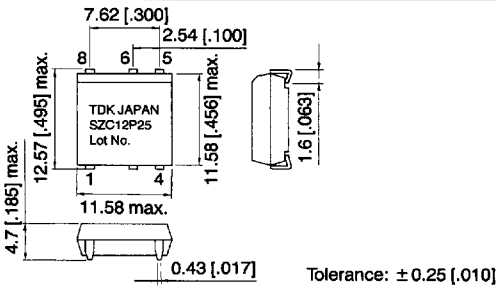
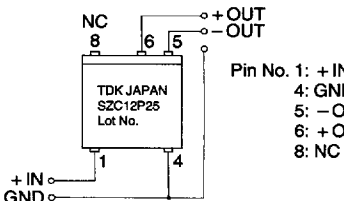
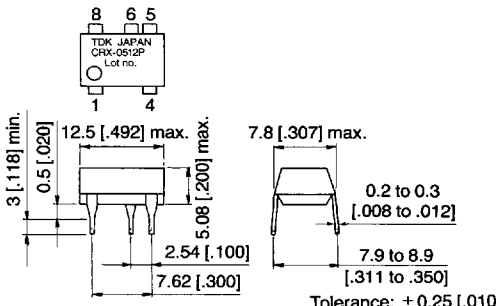
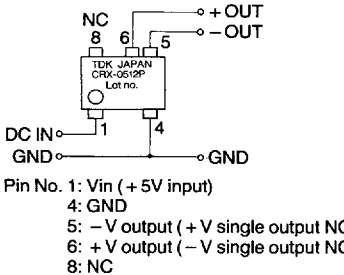
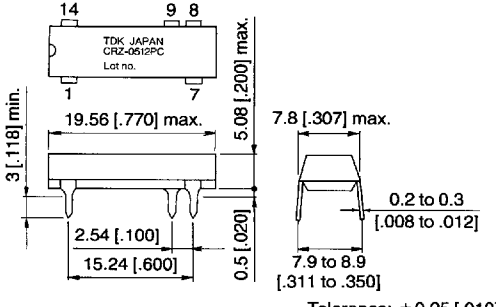
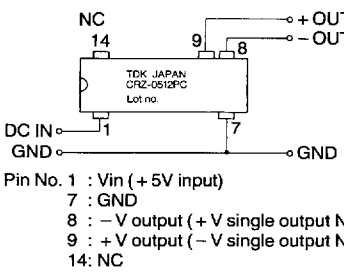
DC TO DC CONVERTERS

TEMPERATURE RANGE

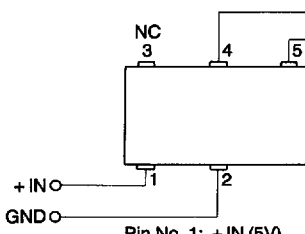
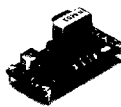
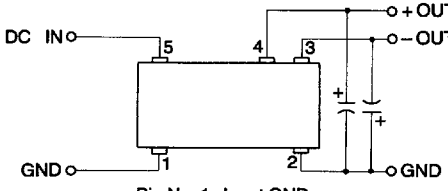
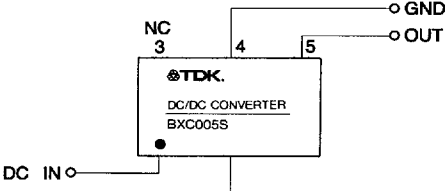
Series	Operating	Storage
RZC, RZ/SZC, SZ/CRX, CRZ	0 to 70	-40 to +85
BX034, BXC	-5 to +50	-30 to +85
MSX019	0 to 60	-20 to +85
SPB	0 to 60	-25 to +80
DEL, DEF	-10 to +70	-20 to +70

DERATING CURVE (RZC, RZ, SZC, SZ)



Series	Shapes and dimensions (mm) [inches]	Connections	Weight (g)	Fig.
RZC, RZ	  Dimensions: 14, 9, 8, 7, 1, 3 [1.18] min., 19.56 [.770] max., 5.08 [.200] max., 7.8 [.307] max., 0.2 to 0.3 [.008 to .012], 2.54 [.100], 15.24 [.600], 0.5 [.020], 7.9 to 8.9 [.311 to .350]. Tolerance: ±0.25 [.010]	 Pin No. 1: Vin (+5Vin) 7: GND 8: -Vout (+V single output NC) 9: +Vout (-V single output NC) 14: NC	1.6 typ.	1
SZC, SZ	  Dimensions: 7.62 [.300], 2.54 [.100], 8, 6, 5, 12.57 [.495] max., 11.58 max., 11.58 [.456] max., 1.6 [.063], 4.7 [.185] max., 12.57 [.495] max., 11.58 max., 0.43 [.017]. Tolerance: ±0.25 [.010]	 Pin No. 1: +IN (+5V) 4: GND 5: -OUT (+Vout NC) 6: +OUT (-Vout NC) 8: NC	1.8 max.	2
CRX	  Dimensions: 8, 6, 5, 12.5 [.492] max., 7.8 [.307] max., 0.2 to 0.3 [.008 to .012], 2.54 [.100], 7.62 [.300], 0.5 [.020], 5.08 [.200] max., 3 [.118] min. Tolerance: ±0.25 [.010]	 Pin No. 1: Vin (+5V input) 4: GND 5: -V output (+V single output NC) 6: +V output (-V single output NC) 8: NC	1 typ.	3
CRZ	  Dimensions: 14, 9, 8, 7, 1, 3 [.118] min., 19.56 [.770] max., 5.08 [.200] max., 7.8 [.307] max., 0.2 to 0.3 [.008 to .012], 2.54 [.100], 15.24 [.600], 0.5 [.020], 7.9 to 8.9 [.311 to .350]. Tolerance: ±0.25 [.010]	 Pin No. 1: Vin (+5V input) 7: GND 8: -V output (+V single output NC) 9: +V output (-V single output NC) 14: NC	1.6 typ.	4

Power Converters

Series	Shapes and dimensions (mm) [inches]	Connections	Weight (g)	Fig.
BX034	 $1.4 [0.055]$ $7 [276]$ max. $0.5 [0.020]$ $2.85 \pm 0.75 [112 \pm 0.030]$ $30 [1.181]$ max. $20.32 \pm 0.3 [800 \pm 0.012]$ $25 [0.984]$ max. $0.3 [0.012]$ $10.16 \pm 0.3 [400 \pm 0.012]$ Tolerance: $\pm 0.25 [0.010]$	 NC 3 4 5 + IN 1 GND 2 Pin No. 1: + IN (5V) 2: Input GND 3: NC 4: Output GND 5: OUT (5V)	3.7 typ.	5
MSX019	 $(22.86 [900])$ $5.08 [200]$ $16 [630]$ max. $27.94 [1.100]$ $15 [591]$ max. $0.5 [0.020]$ $33.02 [1.300]$ max. $2.85 \pm 0.75 [112 \pm 0.030]$ $1 [0.039]$ max. $0.3 [0.012]$ $15.24 [0.600]$ Tolerance: $\pm 0.25 [0.010]$	 DC IN 5 GND 1 Pin No. 1: Input GND 2: Output GND 3: - 12V output 4: + 12V output 5: + IN (+5V)	4 typ.	6
BXC	 $31.5 [1.240]$ max. $4.5 \pm 0.5 [1.77 \pm 0.020]$ $23 [906]$ max. $20.32 [800]$ $8.5 [335]$ max. $0.5 [0.020]$ $10.16 [400]$ Tolerance: $\pm 0.25 [0.010]$	 NC 3 4 5 DC IN 1 GND 2 Pin No. 1: + IN (+5V input) 2: Input GND 3: NC 4: Output GND 5: OUT	9.5 typ.	7
SPB 5W type	 $50.8 \pm 0.7 [2.000 \pm 0.028]$ $3.5 [138]$ $39.8 \pm 0.7 [1.567 \pm 0.028]$ $8.5 \pm 0.5 [335 \pm 0.020]$ $90.7 [0.028]$ $33 \pm 0.5 [1.299 \pm 0.020]$ $3.4 [134]$ $6.65 [262]$ $7.5 \pm 0.3 [295 \pm 0.012]$ $14.15 [557]$ $14.15 [557]$ $7.5 \pm 0.3 [295 \pm 0.012]$ Tolerance: $\pm 0.5 [0.020]$		30 max.	8

Power Converters

Series	Shapes and dimensions (mm) [inches]	Connections	Weight (g)	Fig.
SPB 10W Type			40 max.	8

DEL DEF			6 to 15 max.	9
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Part No.	DEL series	DEF series	A ± 1 [.039]	B ± 1 [.039]	C ± 0.5 [.020]	D max.	E max.	n	n'	Connection
DEL05-0R5P			25.7 [1.012]	19 [.748]	25.4 [1.000]	10 [.394]	6.2 [.244]	3 [.118]	4 [.157]	Type A
DEL03-1R0P DEL05-1R0P DEL12-0R2P DEL24-0R1P		DEF03-1R0P	33.3 [1.311]	19 [.748]	33 [1.299]	11 [.433]	7.2 [.283]	3 [.118]	4 [.157]	Type A
DEL03-2R0P DEL05-2R0P DEL12-0R4P DEL24-0R2P		DEF023-2R0P	33.3 [1.311]	25 [.984]	33 [1.299]	11 [.433]	7.2 [.283]	5 [.197]	6 [.236]	Type B
DEL03-3R0P DEL05-1R0N DEL05-3R0P DEL12-0R6P DEL12-0R6N DEL24-0R3P		DEF03-3R0P DEF05-0R6P* DEF05-0R6N DEF12-0R5P* DEF24-R25P*	38.4 [1.512]	25 [.984]	38.1 [1.500]	12.7 [.500]	8.9 [.350]	5 [.197]	6 [.236]	Type B
DEL12-0R8P DEL24-0R4P			38.4 [1.512]	31 [1.220]	38.1 [1.500]	11 [.433]	7.2 [.283]	7 [.276]	8 [.315]	Type C

* Custom-made product

Power Converters

Series	Maximum output power (W)	Input voltage (Vdc)	Output voltage (Vdc)	Output current (mA)	Features	Fig.
RZC	0.175 to 0.3	5 ± 0.5	+15, +12, -5, -12, -15, ±12, ±15	0 to 8 0 to 10 0 to 20 0 to 25 0 to 35 0 to 50	• Transfer molded • Built-in smoothing capacitor	1
RZ	0.175 to 0.3	5 ± 0.5	+15, +12, -5, -12, -15, ±12, ±15	0 to 8 0 to 10 0 to 20 0 to 25 0 to 35 0 to 50	• Transfer molded • Without built-in smoothing capacitor	1
SZC	0.3	5 ± 0.5	+15, +12, -12, -15	2 to 20 2 to 25	• Surface mountable type • Transfer molded • Built-in smoothing capacitor	2
SZ	0.25 to 0.3	5 ± 0.5	+15, +12, -5, -12, -15	0 to 20 0 to 25 0 to 50	• Surface mountable type • Transfer molded • Without built-in smoothing capacitor	2
CRX	0.25 0.30	5 ± 10%	-5 ± 0.4 +12 ± 0.5 -12 ± 0.5 +15 ± 0.6 -15 ± 0.6	0 to 50 0 to 25 0 to 25 0 to 20 0 to 20	• Dual-in-line packaging type • Compact type • Available for automatic insertion machine	3
CRZ	0.5 0.6	5 ± 10%	-5 ± 0.4 +12 ± 0.5 -12 ± 0.5 +15 ± 0.6 -15 ± 0.6 -24 ± 0.8	0 to 100 0 to 50 0 to 50 0 to 40 0 to 40 0 to 25	• Dual-in-line packaging type • Built-in smoothing capacitor • Available for automatic insertion machine	4
BX034	1.2	5 ± 0.25	5	40 to 225	• Isolated primary and secondary • Built-in smoothing capacitor	5
MSX019	1.2	5 ± 0.25	±12	5 to 50	• Isolated primary and secondary • Without built-in smoothing capacitor	6
BXC	1.2	5 ± 0.25	5, 12	20 to 100 40 to 225	• Isolated primary and secondary	7
SPB	5 to 10	20 to 56	5, 12, 15, 24	0.2 to 2.0	• Thin type • Isolated primary and secondary	8
DEL	2.5 to 15	6 to 15	+3.3, +5, -5, +12, -12, +24	1 to 3A 0.5 to 3A 1A 0.2 to 0.8A 0.6A 0.1 to 0.4A	• With remote ON/OFF control terminal • Built-in over current protection circuit • Adjustable output voltage within ±10% • Compact and thin (12.7mm [.500 inches] height max.) type	9
DEF	2.5 to 15	4.5 to 7.5	+3.3, +5, -5, +12, +24	1 to 3A 0.6A 0.5A 0.25A	• With remote ON/OFF control terminal • Built-in over current protection circuit • Adjustable output voltage within ±10% • Compact and thin (12.7mm [.500 inches] height max.) type	9