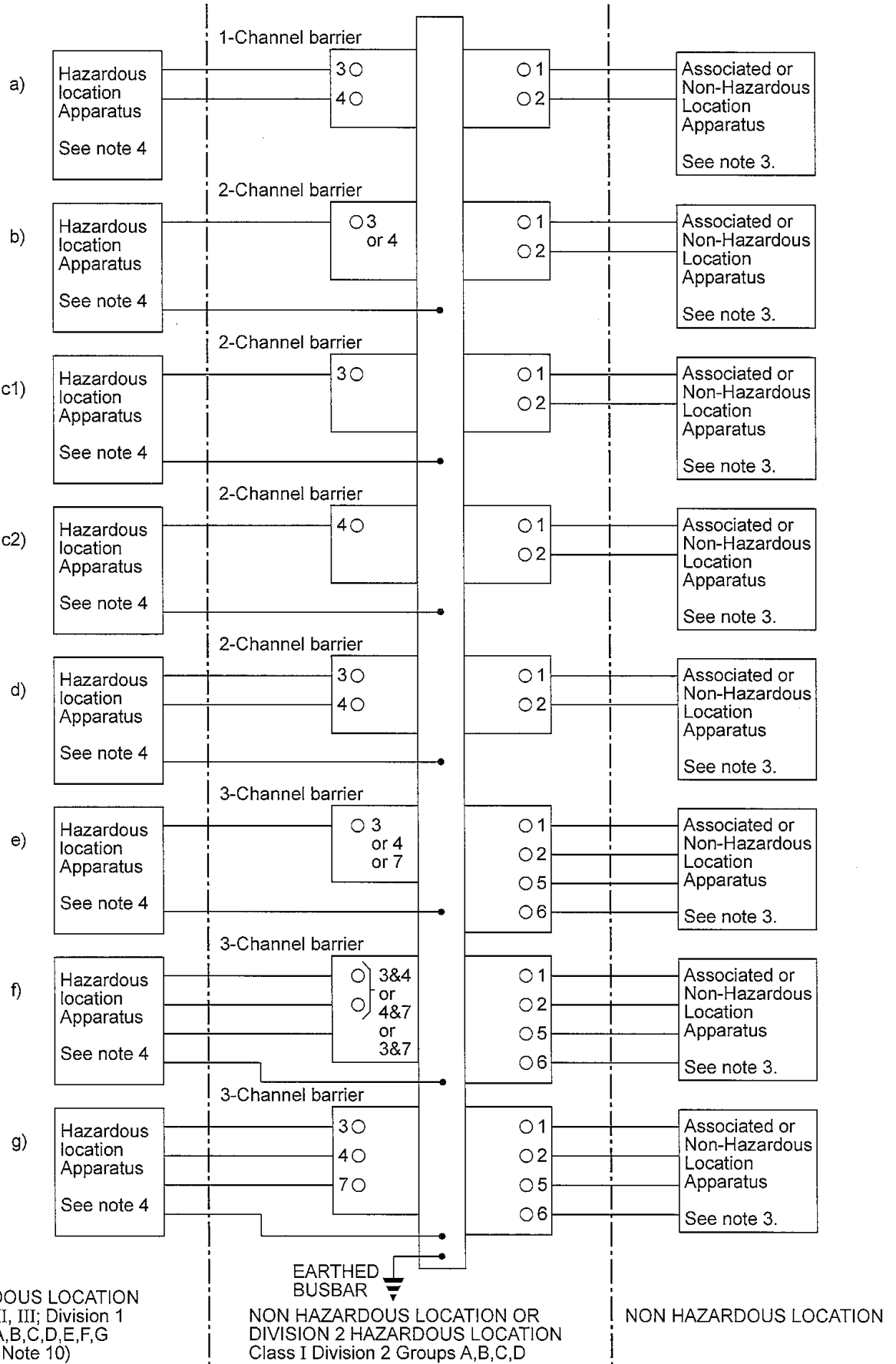


Dimensions in mm

Do Not Scale

Third Angle Projection



HAZARDOUS LOCATION
 Class I, II, III; Division 1
 Groups A,B,C,D,E,F,G
 (But see Note 10)

NON HAZARDOUS LOCATION OR
 DIVISION 2 HAZARDOUS LOCATION
 Class I Division 2 Groups A,B,C,D

NON HAZARDOUS LOCATION

Scale N/A

Certifying Authority: UL

Sheet 1 of 10

Title
 MTL7700 SERIES BARRIER CONTROL DRAWING

Drg. No.
 SCI-991

Modification

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Date

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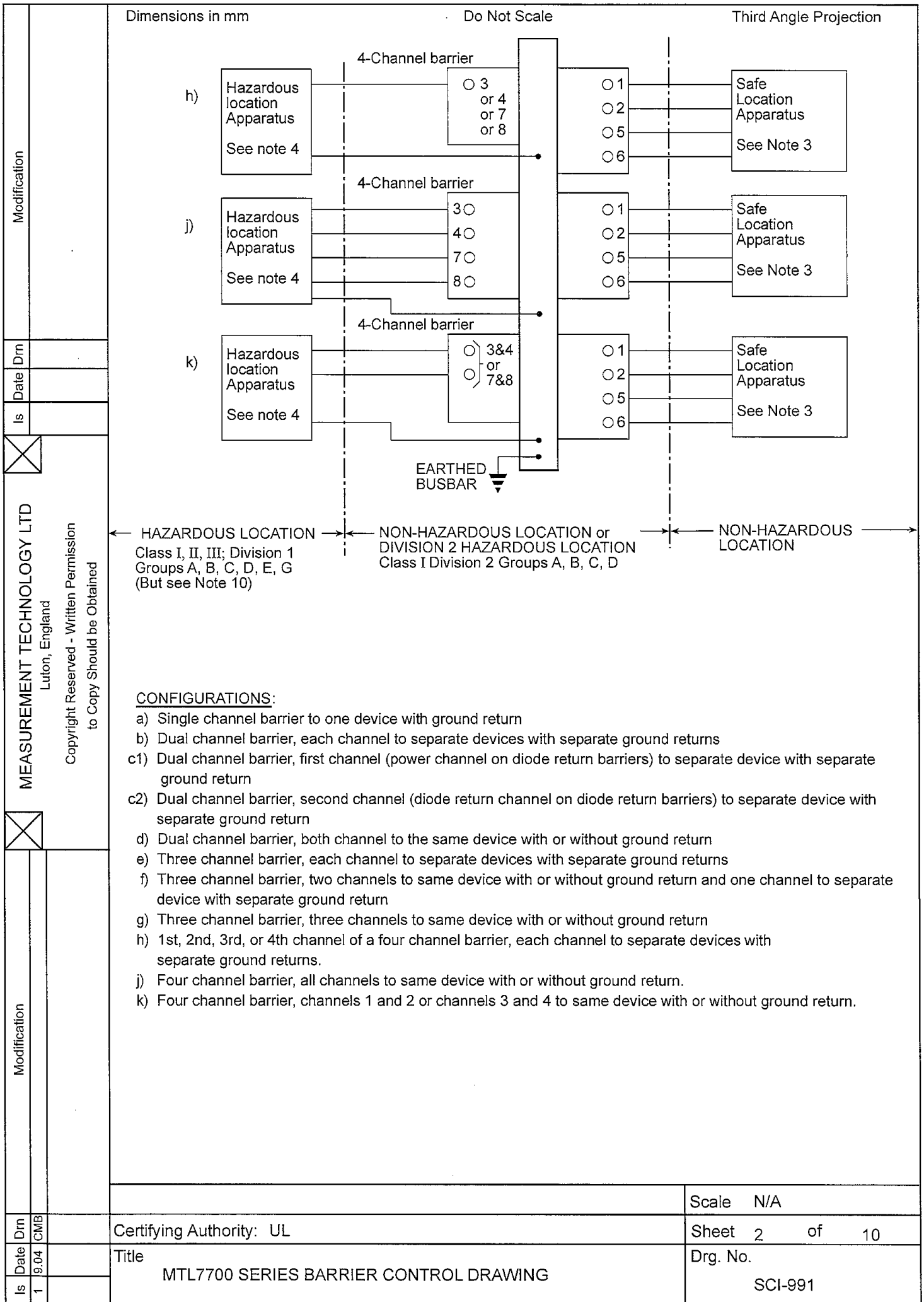
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Dimensions in mm

Do Not Scale

Third Angle Projection

Note 1

MTL7700 Series Shunt Diode Barriers must be secured to a DIN 'T' section (35x27x7.5mm) mounting rail. Rails constructed of aluminium or aluminium-based alloys must not be used. The mounting rail must be provided with at least one grounding terminal (two are recommended) which should be situated at each end of the rail. These terminals are to be used for the intrinsic safety grounding and must be capable of accommodating conductors up to 4mm in cross-section (12 AWG).

Note 2

The intrinsic safety grounding system must be such that when installed the ground loop impedance (including the mounting rail) does not exceed 1.0Ω.

Note 3

The Non-Hazardous (Safe) Location or Division 2 equipment must not generate or use voltages (Um) in excess of 250V rms or dc with respect to earth.

Note 4

The Hazardous Location equipment may be UL Listed devices suitable for the locations which it is to be installed and with correct Entity parameters or Simple Apparatus.

If the Simple Apparatus consists only of switches, then the entity parameter table on subsequent pages of this drawing applies without any temperature limitation.

If the Simple Apparatus consists of thermocouples (TC's), Light Emitting Diodes (LED's) or Resistance Temperature Devices (RTD's), with or without switches, then the maximum output power (Po) from the barrier connected to simple apparatus must not exceed the following:

Maximum barrier output power (Po)	Maximum ambient Temperature (Ta) where simple apparatus is located
1.3 Watts	40°C

Note 5

Barriers must be installed in suitable equipment that complies with the enclosure mounting, spacing and segregation requirements of the ultimate application.

Note 6

The MTL7700 Series Shunt Diode safety barriers are Associated Apparatus, and when mounted in an appropriate enclosure may be installed in the following locations:

- i Non-Hazardous (Safe) Locations
- ii Class I, Division 2, Groups A,B,C, and D Hazardous Locations and T4 Temperature code.

When installed in a Listed, dust-ignition proof enclosure, the barriers may also be installed in the following locations:

- iii Class II Division 2, Groups F and G Hazardous Locations and T4 Temperature code.
- iv Class III, Division 2 Hazardous Locations and T4 Temperature code.

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Title
MTL7700 SERIES BARRIER CONTROL DRAWING

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Dimensions in mm

Do Not Scale

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Note 7

Barriers must be installed in accordance with the barrier manufacturer's control drawing and Article 504 of the National Electrical Code, ANSI/NFPA 70 for installation in the United States.

Note 8

Entity parameters for barriers listed in the parameters table must be used to determine the suitability of the barrier for connection to hazardous location apparatus. The following must be observed:

$V_{oc} \text{ or } V_t (U_o) \leq V_{max} (U_i)$

$I_{sc} \text{ or } I_t (I_o) \leq I_{max} (I_i)$

$P_o \leq P_i$

$C_a (C_o) \geq C_{cable} + C_i$

$L_a (L_o) \geq L_{cable} + L_i \text{ or } L_a/R_a (L_o/R_o) \geq L_{cable}/R_{cable} \text{ and } L_a/R_a (L_o/R_o) \geq L_i/R_i$

Note 9

Not applicable.

Note 10

Certain barriers are not permitted as associated apparatus for Div 1 Groups A,B. Refer to entries with asterisks in the following table.

Note 11

When fitted in a Safe Area, the barriers may be used at the same maximum ambient temperature as when used in Division 2.



Note 12

The MTL7798 is not a Safety Barrier, but a Power Feed Module for use with the barriers. It may be installed in Division 2, but is not Associated Apparatus.

WARNING:

The following precautions must be taken when MTL7700 Series Shunt Diode Barriers are installed in Division 2 Hazardous locations:

- i Barriers must not be fitted to or removed from the DIN rail unless power is off or the location is known to be free of flammable vapors.
- ii Plug in terminals on non-hazardous (Safe) side of the barriers as well as the bus power terminal jumper of barriers fitted with the bus power feature, must not be inserted or removed unless power is off or the location is known to be free of flammable vapors.

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Dimensions in mm



Do Not Scale

Third Angle Projection

BARRIER Model Terminals	C O N F I G	Voc or Uo (V)	Isc or Io (mA)	Ro (ohms)	Po (W)	Ca or Co (µF) AB/CE/DFG	La or Lo (mH) AB/CE/DFG	La/Ra or Lo/Ro (µH/Ω) AB/CE/DFG
MTL7706+ 3 & 4	a	28	93	300	0.65	0.083/0.65/2.15	4.2/12.6/33.6	56/210/444
MTL7707+ 3 & GND	c1	28	93	300	0.65	0.083/0.65/2.15	4.2/12.6/33.6	56/210/444
MTL7707+ 4 & GND	c2	28	0	diode	—	0.083/0.65/2.15	—	—
MTL7707+ 3 & 4	d	29.6	97.7	300	0.72	0.07/0.578/1.88	3.7/12.6/29.7	49/196/393
MTL7707P+ 3 & GND	c1	28	171	164	1.2	*0.65/2.15	*5.103/10.206	*119/236
MTL7707P+ 4 & GND	c2	28	0	diode	—	0.083/0.65/2.15	—	—
MTL7707P+ 3 & 4	d	29.6	179	164	1.33	*0.578/1.88	*4.4/8.8	*107/213
MTL7710+/- 3 & 4	a	10	200	50	0.5	3.0/20/100	0.91/2.72/7.25	74/310/627
MTL7715+/- 3 & 4	a	15	150	100	0.56	0.58/3.55/14	1.45/7.22/14	66/263/544
MTL7715P+/- 3 & 4	a	15	291	51	1.09	0.58/3.55/14.0	0.33/0.99/2.64	28/140/280
MTL7722+/- 3 & 4	a	22	147	150	0.81	0.165/1.14/4.2	1.45/7.22/14	45/180/373
MTL7728+/- 3 & 4	a	28	93	300	0.65	0.083/0.65/2.15	4.2/12.6/33.6	56/210/444
MTL7728P+/- 3 & 4	a	28	119	234.6	0.83	0.083/0.65/2.15	2.51/7.53/20	44/168/354

* Not permitted for Groups A/B

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Dimensions in mm

Do Not Scale

Third Angle Projection

BARRIER Model Terminals	C O N F I G	Voc or Uo (V)	Isc or Io (mA)	Ro (ohms)	Po (W)	Ca or Co (µF) AB/CE/DFG	La or Lo (mH) AB/CE/DFG	La/Ra or Lo/Ro (µH/Ω) AB/CE/DFG
MTL7729P+/- 3 & 4	a	28	170	164	1.19	* /0.65/2.15	* /5.65/11.34	* /127/260
MTL7741 3 & 4	d	10	19	—	0.039	2.86 /20.0/100	96 /365/696	658.78/1900/1900
MTL7742 3 & 4	d	10	19	—	0.039	2.86 /20.0/100	96 /365/696	658.78/1900/1900
MTL7743 3 & 4 or 7 & 8	k	10	19	—	0.039	2.86 /20.0/100	96 /365/696	658.78/1900/1900
MTL7743 3,4,7 & 8	j	10	38	—	0.078	2.73 /19.9/100	25 /91/193	184/694/1323
MTL7744 3 & 4 or 7 & 8	k	10	19	—	0.039	2.86 /20.0/100	96 /365/696	658.78/1900/1900
MTL7744 3,4,7 & 8	j	10	38	—	0.078	2.73 /19.9/100	25 /91/193	184/694/1323
MTL7745 3 & 4	d	10	19	—	0.039	2.86 /20.0/100	96 /365/696	658.78/1900/1900
MTL7755ac 3 & GND or 4 & GND	b	3.3	330	10	0.272	100/1000/1000	0.32/1.3/2.61	130/522/1044
MTL7755ac 3 & 4	d	6.6	660	5	0.544	22/1000/1000	0.085/0.32/0.65	32/130/261

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* Not permitted for Groups A/B

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		Dimensions in mm				Do Not Scale				Third Angle Projection				
BARRIER Model	Terminals	C	O	N	F	I	G	Voc or Uo (V)	Isc or Io (mA)	Ro (ohms)	Po (W)	Ca or Co (µF) AB/CE/DFG	La or Lo (mH) AB/CE/DFG	La/Ra or Lo/Ro (µH/Ω) AB/CE/DFG
MTL7756ac	3 & GND or 4 & GND or 7 & GND	e						3	300	10	0.225	100/1000/1000	0.46/1.37/3.66	145/722/1442
MTL7756ac	3 & 4 or 4 & 7 or 3 & 7	f					6	600	5	5	0.45	40/1000/1000	0.13/0.39/1.03	69/206/548
MTL7756ac	3 & 4 & 7	g					6	900	3.3	3.3	0.675	40/1000/1000	0.06/0.19/0.49	44/131/349
MTL7758+/-	3 & GND	c1					7.5	750	10	10	1.4	11.1/174/1000	0.07/0.20/0.54	26/77/206
MTL7758+/-	4 & GND	c2					7.5	750	10	10	1.4	11.1/174/1000	0.07/0.20/0.54	26/77/206
MTL7758+/-	3 & 4	d					8.0	1500	5	5	2.8	8.4/100/1000	0.02/0.05/0.14	10/30/81
MTL7760ac	3 & GND or 4 & GND	b					10	200	50	50	0.5	3.0/20.2/100	0.91/2.72/7.25	74/308/617
MTL7760ac	3 & 4	d					10	400	25	25	1.0	3.0/20.2/100	0.2/1.0/1.8	35.6/142.2/284.4
MTL7761ac	3 & GND or 4 & GND	b					9	100	90	90	0.225	4.9/40/500	3.65/14.6/29.2	160/616/1281
MTL7761ac	3 & 4	d					18	200	45	45	0.45	0.31/1.78/7.6	0.91/2.72/7.2	62/258/522
MTL7761Pac	3 & GND or 4 & GND	b					9	26	351.5	351.5	0.058	4.9/40/500	54/208/419	613/2382/2778
MTL7761Pac	3 & 4	d					18	52	175.75	175.75	0.115	0.31/1.78/7.6	13.5/52.6/105.2	236/870/1747

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MTL7700 SERIES BARRIER CONTROL DRAWING		Drng. No.	SCI-991

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Dimensions in mm Do Not Scale Third Angle Projection

BARRIER Model Terminals	C O N F I G	Voc or Uo (V)	Isc or Io (mA)	Ro (ohms)	Po (W)	Ca or Co (μ F) AB/CE/DFG	La or Lo (mH) AB/CE/DFG	La/Ra or Lo/Ro (μ H/ Ω) AB/CE/DFG
MTL7764+/- 3 & GND or 4 & GND	b	12	12	1000	0.036	1.41/9/36	240/932/1000	1000/1000/1000
MTL7764+/- 3 & 4	d	13	24	500	0.072	1.0/6.2/22.5	61/226/452	360/1398/1500
MTL7764ac 3 & GND or 4 & GND	b	12	12	1000	0.036	1.41/9/36	240/932/1000	997/1000/1000
MTL7764ac 3 & 4	d	24	24	500	0.072	0.125/0.93/3.35	50.9/203/407	360/1398/1500
MTL7765ac 3 & GND or 4 & GND	b	15	150	100	0.56	0.58/3.55/14.0	1.45/7.16/14.3	66/263/544
MTL7765ac 3 & 4	d	15	300	50	1.12	0.58/3.55/14.0	0.32/0.95/2.54	31.6/126.4/252.8
MTL7766ac 3 & GND or 4 & GND	b	12	80	150	0.24	1.41/9/36	5.6/22.4/44.9	149/556/1174
MTL7766ac 3 & 4	d	24	160	75	0.48	0.125/0.93/3.35	1.41/4.4/11	58/234/481
MTL7766Pac 3 & GND or 4 & GND	b	12	157	76.4	0.471	1.41/9/36	1.47/44/11	78/313/644
MTL7766Pac 3 & 4	d	24	314	38.2	0.942	0.125/0.93/3.35	0.34/1.02/2.71	29/87/231
MTL7767+/- 3 & GND or 4 & GND	b	15	150	100	0.56	0.58/3.55/14	1.45/7.22/14	66/263/544
MTL7767+/- 3 & 4	d	15	300	50	1.125	0.58/3.55/14	0.32/0.95/2.54	22/108/216

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* Not permitted for Groups A/B

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Dimensions in mm Do Not Scale Third Angle Projection

BARRIER Model Terminals	C O N F I G	Voc or Uo (V)	Isc or Io (mA)	Ro (ohms)	Po (W)	Ca or Co (μ F) AB/CE/DFG	La or Lo (mH) AB/CE/DFG	La/Ra or Lo/Ro (μ H/ Ω) AB/CE/DFG
MTL7778ac 3 & GND or 4 & GND	b	28	47	600	0.33	0.083/0.65/2.15	16/62/130	107/398/789
MTL7778ac 3 & 4	d	28.9	95.1	300	0.687	0.075 /0.609/1.98	3.9/15.7/31.4	51.7/206/413
MTL7779+/- 3 & GND or 4 & GND	b	28	93	300	0.65	0.083/0.65/2.15	4.2/12.6/33.6	56/210/444
MTL7779+/- 3 & 4	d	28.5	188	150	1.3	* /0.627/2.05	* /4.01/7.9	* /106/212
MTL7787+/- 3 & GND	c1	28	93	300	0.65	0.083/0.65/2.15	4.2/12.6/33.6	56/210/444
MTL7787+/- 4 & GND	c2	28	0	diode	—	0.083/0.65/2.15	—	—
MTL7787+/- 3 & 4	d	29.6	94	300	0.698	0.070/0.578/1.88	3.99/12.6/31.9	50/203/407
MTL7787P+/- 3 & GND	c1	28	119	234.6	0.835	0.083/0.65/2.15	2.51/7.53/20	44/168/354
MTL7787P+/- 4 & GND	c2	28	0	diode	—	0.083/0.65/2.15	—	—
MTL7787P+/- 3 & 4	d	30.7	122	252.27	0.934	0.0616/0.524/1.7	2.40/7.53/19.2	38.1/152/304.5

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Dimensions in mm										Do Not Scale										Third Angle Projection									
BARRIER Model Terminals	C O N F I G	Voc or Uo (V)	Isc or Io (mA)	Ro (ohms)	Po (W)	Ca or Co (µF) AB/CE/DFG	La or Lo (mH) AB/CE/DFG	La/Ra or Lo/Ro (µH/Ω) AB/CE/DFG																					
MTL7788+/- MTL7788R+/- 3 & GND	c1	28	93	300	0.65	0.083/0.65/2.15	4.2/12.6/33.6	56/210/444																					
MTL7788+/- MTL7788R+/- 4 & GND	c2	10	200	50	0.5	3.0/20/100	0.91/2.72/7.25	74/310/627																					
MTL7788+/- MTL7788R+/- 3 & 4	d	28	294	42.85	0.92	0.083/0.65/2.15	0.33/0.99/2.64	25/124/253																					
MTL7789+/- 3 & GND or 7 & GND	h	28	46.5	600	0.33	0.083/0.65/2.15	16/63/133	106/393/781																					
MTL7789+/- 4 & GND or 8 & GND	h	28	0	diode	0	0.083/0.65/2.15	—	—																					
MTL7789+/- 3 & 4 & 7 & 8	j	29.6	96	300	0.72	0.07/0.587/1.88	3.8/15.4/30.8	50.18/200.7/401																					
MTL7789+/- 3 & 4 or 7 & 8	k	29.6	48	600	0.36	0.07/0.587/1.88	15.4/61.7/123.5	100.37/393/781																					
MTL7796+/- 3 & GND	c1	26	87	300	0.56	0.1/0.77/2.6	4.91/20/40	64/239/505																					
MTL7796+/- 4 & GND	c2	20	51	390	0.26	0.22/1.41/5.5	13/51/108	136/501/1014																					
MTL7796+/- 3 & 4	d	26.6	138	169.56	0.81	0.094/0.73/2.42	1.47/5.89/11.78	34.4/137/275.3																					
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Refer to Note 12 for information about MTL7798 Power Feed Module.