

Hitachi Power Diodes

Status List

Date: Dec. 2023

Compliance status of RoHS directive

C:Compliant **S.C:**Compliant (Included RoHS exemption substance) **N:**Non compliant

Production Status

M:Mass production

O:Order production

U:Under development

W:Working sample

N:Not for new design

D:Discontinued

E:Engineering sample

Load Dump Surge Suppressor Diodes

Type	Absolute maximum ratings			Characteristics			Outline	RoHS Status	Production year	Production status			
	PRSM (kW)	VDC (V)	Tj (°C)	Vz (V)		Test Current (mA)							
				Min.	Max.								
ZSH5MA27(※)	3.0kW 62A	18	-40 ~+150	24.0	30.0	10	6A	S.C	2000	M			
ZSH5MA27(A)(※)										N			
ZSH5MC27(※)	3.2kW 65A							S.C	2007	M			
ZSH5MC27(S)(※)								S.C	2009	M			
ZSH5MAZ27	3.4kW 70A	22					36.0	44.0	10	6B	S.C	2015	M
ZSH8MD27											5.7kW 130A	S.C	2015
ZSH8MD40	5.7kW 80A	32		36.0	44.0	10	7A	S.C	2009	M			
ZSH5MT27C	3.4kW 70A	22		24.0	30.0	10	7A	S.C	2009	M			
ZSH5MT27(Z)										4.3kW 90A	O		
ZSH5MT40C	4.3kW 62A	32		36.0	44.0	10	M						
ZSH5MT48C	4.3kW 50A	39		43.2	52.8	10	M						
ZSH5MV14	4.3kW 200A	11		13.0	15.0	10	5	S.C	2013	M			
ZSH5MV27	4.3kW 100A	22	24.0	30.0	10	2012			M				

※ Please consider alternative new products as follows.

ZSH5MA27/27(A) --> ZSH5MAZ27,ZSH5MT series,ZSH8MD27

ZSH5MC27/27(S) --> ZSH5MAZ27,ZSH5MT series,ZSH8MD27

Surge Suppressor Diodes

◆Surface Mount Type

Type	Absolute maximum ratings			Characteristics			Outline	RoHS Status	Production year	Production status	
	PRSM (kW)	VRM (V)	T _j (°C)	V _z (V)		Test Current (mA)					
				Min.	Max.						
DAM1MB	0.6	-65 ~ +185	12	9.7	11.4	12.7	1	4A	S.C	2013	M
			13	10.5	12.4	14.1	1				M
			15	12.1	13.5	15.6	1				M
			16	12.9	15.3	17.1	1				M
			18	14.5	16.8	19.1	1				M
			20	16.2	18.8	21.2	1				O
			22	17.8	20.8	23.3	1				M
			24	19.4	22.7	25.6	1				M
			27	21.8	25.1	28.9	1				M
			30	24.3	28.0	32.0	1				M
			33	26.8	31.0	35.0	1				M
			36	29.1	33.4	38.6	1				M
			39	31.6	36.1	41.9	1				M
			43	34.8	39.8	46.2	1				O
			47	38.0	43.3	50.7	1				M
			51	41.3	46.9	55.1	1				M
			68	55.1	61.2	74.8	1				M
75	60.7	67.5	82.5	1	M						
82	66.4	73.8	90.2	1	O						
DAM2MB	1.2	-65 ~ +185	12	9.7	11.4	12.7	1	4B	S.C	2013	O
			13	10.5	12.4	14.1	1				O
			15	12.1	13.5	15.6	1				O
			16	12.9	15.3	17.1	1				O
			18	14.5	16.8	19.1	1				O
			20	16.2	18.8	21.2	1				O
			22	17.8	20.8	23.3	1				O
			24	19.4	22.7	25.6	1				O
			27	21.8	25.1	28.9	1				M
			30	24.3	28.0	32.0	1				M
			33	26.8	31.0	35.0	1				M
			36	29.1	33.4	38.6	1				M
			39	31.6	36.1	41.9	1				M
			43	34.8	39.8	46.2	1				O
			47	38.0	43.3	50.7	1				M
			51	41.3	46.9	55.1	1				O
			68	55.1	61.2	74.8	1				O
75	60.7	67.5	82.5	1	O						
82	66.4	73.8	90.2	1	O						
DAM3MB	1.8	-65 ~ +185	12	9.7	11.4	12.7	1	4C	S.C	2013	M
			13	10.5	12.4	14.1	1				M
			15	12.1	13.5	15.6	1				M
			16	12.9	15.3	17.1	1				M
			18	14.5	16.8	19.1	1				O
			20	16.2	18.8	21.2	1				M
			22	17.8	20.8	23.3	1				O
			24	19.4	22.7	25.6	1				O
			27	21.8	25.1	28.9	1				M
			30	24.3	28.0	32.0	1				M
			33	26.8	31.0	35.0	1				M
			36	29.1	33.4	38.6	1				M
			39	31.6	36.1	41.9	1				M
			43	34.8	39.8	46.2	1				O
			47	38.0	43.3	50.7	1				M
			51	41.3	46.9	55.1	1				M
			68	55.1	61.2	74.8	1				M
75	60.7	67.5	82.5	1	O						
82	66.4	73.8	90.2	1	M						

Fast Recovery Diodes

◆Surface Mount Type

Type	Absolute maximum ratings				Characteristics		Outline	RoHS Status	Production year	Production status
	V _{RRM} (V)	I _{F(AV)} (A)	I _{FSM} (A)	T _j (°C)	V _{FM} (at I _{FM}) (V) (A)	t _{rr} (ns)				
DFM1MF2	200	1.0	25	-40 ~+150	0.95 (1.0)	35	4A	S.C	1997	M
DFM3MF2	200	3.0	50	-40 ~+150	0.95 (3.0)	35	4B	S.C	1997	M

High Voltage – Fast Recovery Diodes

◆Resin Molded Type

Type	Absolute maximum ratings				Characteristics		Outline	RoHS Status	Production year	Production status
	V _{RRM} (kV)	* I _{F(AV)} (mA)	I _{FSM} (A)	T _j (°C)	V _{FM} (at I _{FM}) (V) (mA)	t _{rr} (ns)				
DHM3T30	3	3 [15.75]	0.5	-40 ~+120	13 (5)	100	1B	S.C	1989	M
DHM3P40	4				13 (5)	100	1B	S.C	1989	M
DHM3G80	8				25 (5)	100	1F	S.C	1999	M
DHM3J120	12				42 (5)	100	1G	S.C	1999	M
DHM3C140	14				45 (5)	100	1H	S.C	1999	N
DHM3FJ60	6	1 [63]	0.5		22 (5)	70	1F	S.C	1999	M
DHM3FG80	8	3 [15.75]			28 (5)	70	1F	S.C	1999	M
DHM3UM80	8	1 [100] 3 [15.75]			0.5	23 (5)	40	1F	S.C	1998

* [] : Frequency, unit (kHz)

High Voltage – Fast Recovery Diodes (For Automotive)

◆Resin Molded Type

Type	Absolute maximum ratings				Characteristics		Outline	RoHS Status	Production year	Production status
	V _{RRM} (kV)	I _{F(AV)} (mA)	I _{FSM} (A)	T _j (°C)	V _{FM} (at I _{FM}) (V) (mA)	t _{rr} (ns)				
DHM10A30	3.0	10	1	+150	8.4 (10)	-	1K	S.C	2011	M
DHM30A10	1.0	30	3		2.0 (10)	-	1M	S.C	2013	M
DHM30A20	2.0	30	3		5.0 (10)	-	1M	S.C	2013	M
DHM30A25	2.5	30	3		5.0 (10)	-	1M	S.C	2014	M
DHM30A30	3.0	30	3		6.0 (10)	-	1F	S.C	2013	M
DHM30A40	4.0	30	3		10.0 (10)	-	1L	S.C	2011	O

High Voltage – Fast Recovery Diodes (For Automotive) Lead(Pb)–Free

◆Resin Molded Type

Type	Absolute maximum ratings				Characteristics		Outline	RoHS Status	Production year	Production status
	V _{RRM} (kV)	I _{F(AV)} (mA)	I _{FSM} (A)	T _j (°C)	V _{FM} (at I _{FM}) (V) (mA)	t _{rr} (ns)				
DHM30A10E	1.0	30	3	+150	2.0 (10)	-	1M	C	2017	M
DHM30A20E	2.0	30	3		5.0 (10)	-	1M	C	2017	M
DHM30A25E	2.5	30	3		5.0 (10)	-	1M	C	2016	M
DHM30A30E	3.0	30	3		6.0 (10)	-	1F	C	2017	M
DHM30A40E	4.0	30	3		10.0 (10)	-	1L	C	2017	M

Alternator Diodes

◆ Super Low Loss Diodes

Type	Absolute maximum ratings		Characteristics			Outline	RoHS Status	Production year	Production status
	IF(AV) (A)	Tj (°C)	Vz (V)		VFM (at IFM) (V) (A)				
			Min.	Max.					
MSM35J22	35	-40~+175	20	24	0.3 (100)	10	S.C	-	E
MSM35J22R									
MSM50J22	50	-40~+175	20	24	0.12 (100)	10	S.C	-	E
MSM50J22R									

◆ Standard Type Diodes

Type	Absolute maximum ratings		Characteristics			Outline	RoHS Status	Production year	Production status		
	IF(AV) (A)	Tj (°C)	Vz (V)		VFM (at IFM) (V) (A)						
			Min.	Max.							
ZSM35C22	35	-40~+205	20	23	1.3 (100)	9A	S.C	2013	M		
ZSM35C22R						9C					
ZSM50C22	50				20	23		1.2 (100)	9A	2012	M
ZSM50C22R									9C		
ZSM70A22	70 (Tc ≤ 205°C)	-40~+225	20	24	1.2 (100)	9A	2013	M			
ZSM70A22R	50 (Tc ≤ 225°C)					9C					

◆General-Use Rectifier Diodes

Type	Absolute maximum ratings				Characteristics		Outline	RoHS Status	Production year	Production status
	V _{RRM} (V)	I _{F(AV)} (A)	I _{FSM} (A)	T _j (°C)	V _{FM} (at I _{FM}) (V) (A)	t _{rr} (ms)				
H14A	100	1.0	45	-40 ~+175	1.0 (1.0)	-	2A	S.C	1989	D
B	200									
C	300									
D	400									
E	500									
F	600									
H	800									
J	1,000	-40 ~+165								
V06C	200									
E	400	1.1	35	-65 ~+175	1.4 (1.1)	-	2A	S.C	1976	D
G	600									
J	800									
V03C	200									
E	400	1.3	40		1.1 (1.3)	-	2A	S.C	1975	
G	600									
J	800									
U05B	100									
C	200	2.5	100		1.1 (2.5)	-	2B	S.C	1975	
E	400									
G	600									
J	800									
U15B	100	3	80	1.0 (3.0)	-	2B	S.C	1978	D	
C	200									
E	400									
G	600		60							
J	800									

◆Zener Diodes

Type	Absolute maximum ratings			Characteristics			Outline	RoHS Status	Production year	Production status
	P (W)	PRSM (Wp)	T _j (°C)	V _z (V)		Test Current (mA)				
				Min.	Max.					
AW01-06	1.0	80	-40 ~+150	5.2	6.8	60	2A	S.C	1976	D
AW01/AU01-07	1.0/2.5	80/160	-40 ~+150 / -40 ~+165	6.2	7.9	25/65	2A/2B	S.C/S.C	1976	D / D
08				7.7	8.7	25/65				
09				8.5	9.6	25/65				
10				9.4	10.6	25/65				
11				10.4	11.6	25/65				
12				11.4	12.7	25/65				
13				12.4	14.1	25/65				
15				13.5	15.6	15/40				
16				15.3	17.1	15/40				
18				16.8	19.1	15/40				
20				18.8	21.2	15/40				
22				20.8	23.3	15/40				
24				22.7	25.6	10/25				
27				25.1	28.9	10/25				
30				28.0	32.0	10/25				
33				31.0	35.0	10/25				

◆Fast Recovery Diodes

Type	Absolute maximum ratings				Characteristics		Outline	RoHS Status	Production year	Production status										
	V _{RRM} (V)	I _{F(AV)} (A)	I _{FSM} (A)	T _j (°C)	V _{FM} (at I _{FM}) (V) (A)	t _{rr} (ms)														
DFG1D1 2 4	100 200 400	1.0	30	-65 ~+150	1.5 (1.0)	50ns	2A	S.C	1986	D										
DFG1C1 2 4 6 8	100 200 400 600 800										1.0	35	1.2 (1.0)	0.1	2A	S.C	1985	D		
DFG3A1 2 4	100 200 400	30	1.3 (3.0)		0.1	2B	S.C	1985	D											
V19B C E G	100 200 400 600	30								1.2 (1.0)		0.2	2A						S.C	1977
DFG1A8	800	1.0	40		-65 ~+165	1.2 (1.0)	0.2	2A	S.C											
H114B D E F	200 400 500 600	1.0	40		-40 ~+150	1.15 (1.0)	0.2	2A	S.C	1989	D									
U19B C E	100 200 400											2.5	80	-65 ~+150	1.3 (2.5)	0.2	2B	S.C	1978	D
DFG2A6 8	600 800																			
V11J L M N	800 1,000 1,300 1,500											0.4	30	-65 ~+150	2.5 (0.4)	0.4	2A	S.C	1975	D
V09C E G	200 400 600	0.8	35		-65 ~+165	1.6 (0.8)	0.4	2A	S.C	1975	D									
U07J L M N	800 1,000 1,300 1,500			1.0																
U06C E G	200 400 600	2.0	80		-65 ~+150	1.2 (2.0)	0.4	2B	S.C	1975	D									

◆Controlled Avalanche Diodes

Type	Absolute maximum ratings					Characteristics	Outline	RoHS Status	Production year	Production status									
	V _{RRM} (V)	I _{F(AV)} (A)	P _{RM} (W)	I _{FSM} (A)	T _j (°C)	V _{FM} (at I _{FM}) (V) (A)													
H24F H J	600 800 1,000	1.0	1,000	45	-65 ~+175	1.0 (1.0)	2A	S.C	1989	D									
V08E G J	400 600 800				1.1						40	35	-65 ~+175	1.4 (1.1)	2A	S.C	1975	D	
V07E G J	400 600 800	1.3	40	40		-65 ~+175	1.1 (1.3)	2A	S.C	1975									D
V17A B C D E	50 100 200 300 400				1.3						1,500	50	-40 ~+165	1.1 (1.3)	2A	S.C	1975	D	
U17B C D E	100 200 300 400	2.5	3,000	100		-40 ~+175	1.1 (2.5)	2B	S.C	1975									D

Discontinued

◆ Surge Suppressor Diodes

Type	Absolute maximum ratings			Characteristics			Outline	RoHS Status	Production status
	PRSM (kW)	V _{DC} (V)	T _j (°C)	V _Z (V)		Test Current (mA)			
				Min.	Max.				
DAM1MA/3MA10	0.6/1.8	-40~+150	7	9.4	10.6	25/75	4A/4C	S.C	D
11			8	10.4	11.6	25/75			
12			9	11.4	12.7	25/75			
13			10	12.4	14.1	25/75			
15			11	13.5	15.6	25/75			
16			12	15.3	17.1	15/75			
18			13	16.8	19.1	15/45			
20			14	18.8	21.2	15/45			
22			16	20.8	23.3	15/45			
24			18	22.7	25.6	10/30			
27			20	25.1	28.9	10/30			
30			22	28.0	32.0	10/30			
33			24	31.0	35.0	10/30			
36			26	33.4	38.6	10/30			
39			28	36.1	41.9	10/20			
43			31	39.8	46.2	6/20			
47			34	43.3	50.7	6/20			
51			37	46.9	55.1	6/20			
68			49	61.2	74.8	4/10			
75			54	67.5	82.5	4/10			
82	59	73.8	90.2	3/10					

◆ General-Use Rectifier Diodes

Type	Absolute maximum ratings				Characteristics		Outline	RoHS Status	Production status
	V _{RRM} (V)	* I _{F(AV)} (A)	I _{FSM} (A)	T _j (°C)	V _{FM} (at I _{FM}) (V) (A)	t _{rr} (ms)			
DSA3A1	100	3.0	120	-40~+150	1.0 (3.0)	-	2C	S.C	D
2	200								
4	400								

◆ General-Use Rectifier Diodes

Type	Absolute maximum ratings				Characteristics		Outline	RoHS Status	Production status
	V _{RRM} (V)	* I _{F(AV)} (A)	I _{FSM} (A)	T _j (°C)	V _{FM} (at I _{FM}) (V) (A)	t _{rr} (ms)			
DSM1MA1	100	1.0	25	-40 ~+150	1.1 (1.0)	-	4A	S.C	D
2	200								
4	400								
DSM3MA1	100	3.0	80	-40 ~+150	1.0 (3.0)	-	4B	S.C	D
2	200								
4	400								

Discontinued

◆ Surge Suppressor Diodes

Type	Absolute maximum ratings			Characteristics			Outline	RoHS Status	Production status	
	PRSM (kW)	Vdc (V)	Tj (°C)	Vz (V)		Test Current (mA)				
				Min.	Max.					
DAM1SA/1A10	0.6	7	-40 ~+150	9.4	10.6	25	1A/1B	S.C / S.C	D / D	
11				8	10.4	11.6				25
12				9	11.4	12.7				25
13				10	12.4	14.1				25
15				11	13.5	15.6				25
16				12	15.3	17.1				15
18				13	16.8	19.1				15
20				14	18.8	21.2				15
22				16	20.8	23.3				15
24				18	22.7	25.6				10
27				20	25.1	28.9				10
30				22	28.0	32.0				10
33				24	31.0	35.0				10
36				26	33.4	38.6				10
39				28	36.1	41.9				10
43				31	39.8	46.2				6
47				34	43.3	50.7				6
51				37	46.9	55.1				6
DAM3A/3B10	1.8	7	-40 ~+150	9.4	10.6	75	1E/1D	S.C / S.C	D / D	
11				8	10.4	11.6				75
12				9	11.4	12.7				75
13				10	12.4	14.1				75
15				11	13.5	15.6				75
16				12	15.3	17.1				75
18				13	16.8	19.1				45
20				14	18.8	21.2				45
22				16	20.8	23.3				45
24				18	22.7	25.6				30
27				20	25.1	28.9				30
30				22	28.0	32.0				30
33				24	31.0	35.0				30
36				26	33.4	38.6				30
39				28	36.1	41.9				30
43				31	39.8	46.2				20
47				34	43.3	50.7				20
51				37	46.9	55.1				20

◆ High Voltage – Fast Recovery Diodes

Type	Absolute maximum ratings				Characteristics		Outline	RoHS Status	Production status
	VRRM (kV)	* If(AV) (mA)	IFSM (A)	Tj (°C)	VFM (at IFM) (V) (mA)	t _{rr} (ns)			
DHM3S20	2	3 [15.75]	0.5	-40 ~+120	10 (5)	100	1B	S.C	D
DHM3UG120	12	1 [100] 3 [15.75]			36 (5)	40	1G	S.C	D

*[]: Frequency, unit (kHz)

◆ Load Dump Surge Suppressor Diodes

Type	Absolute maximum ratings			Characteristics			Outline	RoHS Status	Production status
	PRSM(kW) IRSM(A)	Vdc (V)	Tj (°C)	Vz (V)		Iz (mA)			
				Min.	Max.				
ZSA5A27	3.0kW	18	-40 ~+150	24.0	30.0	10	3A	S.C	D
ZSA5MA27	62A						3B	S.C	D
ZSH5MA27(S)							6A	S.C	D
ZSH5MT53C	4.3kW 45A	43		47.7	58.3	10	7A	S.C	D
ZSH5ME27	3.4kW 70A	22		24.0	30.0	10	8	S.C	D

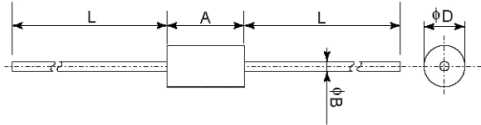
◆ Fast Recovery Diodes

Type	Absolute maximum ratings				Characteristics		Outline	RoHS Status	Production status
	VRRM (kV)	* If(AV) (A)	IFSM (A)	Tj (°C)	VFM (at IFM) (V) (A)	t _{rr} (ms)			
DFG1E 6	600	0.3	5	-65~+150	5.0(0.3)	35ns	2A	S.C	D
8	800								
10	1,000								

Outline

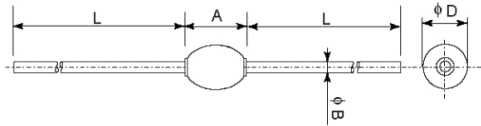
[Dimensions in mm]

● Outline No.1



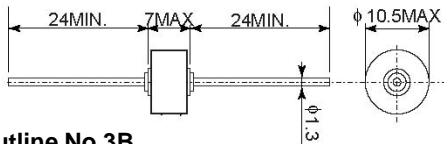
Items	A	φD	φB	L (Min.)
1A	3	2.5	0.6	28
1B	5	2.65	0.6	27
1C	5	2.65	0.8	27
1D	6	3.6	0.8	26
1E	7.5	6.4	1.2	26
1F	6.5	2.5	0.5	28
1G	10	2.5	0.5	26
1H	10	3	0.6	26,28
1J	8	3	0.6	28
1K	6.5	2.5	0.5	27
1L	8	3	0.6	27
1M	5	2.5	0.5	27

● Outline No.2

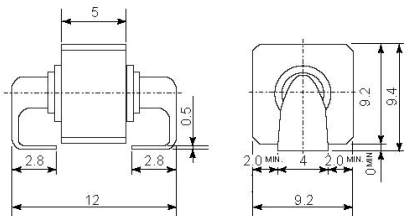


Items	A (Max.)	φD (Max.)	φB	L (Min.)
2A	5	3.5	0.8	29
2B	7	5	1.2	28
2C	7	5	1.2	27

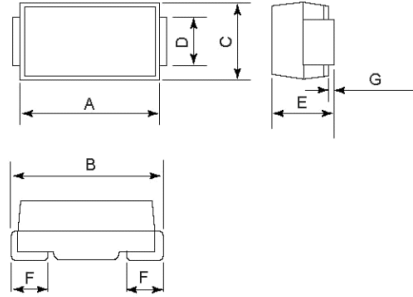
● Outline No.3A



● Outline No.3B

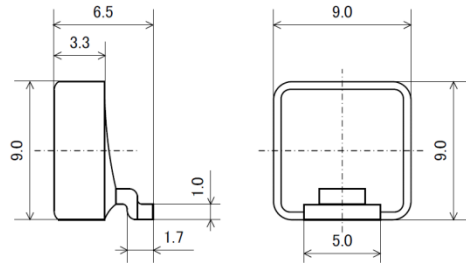


● Outline No.4

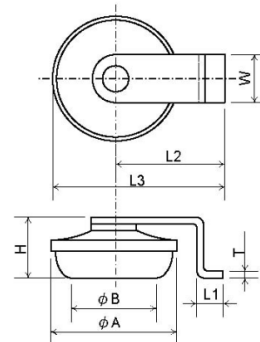


Items	A	B	C	D	E	F	G
4A	4.3	4.7	2.5	1.5	2.0	1.2	0.1
4B	4.4	5.4	3.6	2.0	2.3	1.2	0.2
4C	7.0	7.6	4.0	2.0	2.5	1.4	0.2

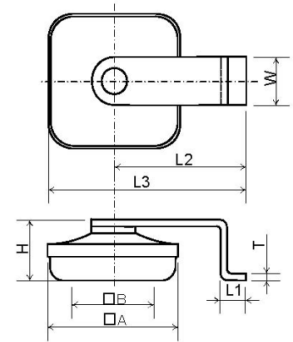
● Outline No.5



● Outline No.6



● Outline No.7A, 7B



Items	A	B	L1	L2	L3	H	W	T
6A	9.6	7.4	2.0	8.3	13.1	4.4	3.5	0.5
6B*	9.6	-	2.0	8.3	13.1	6.0	3.5	0.5
7A	10.0	7.5	2.0	10.0	15.0	4.4	3.5	0.5
7B**	10.0	7.5	2.0	10.0	15.0	4.4	2.7	0.5

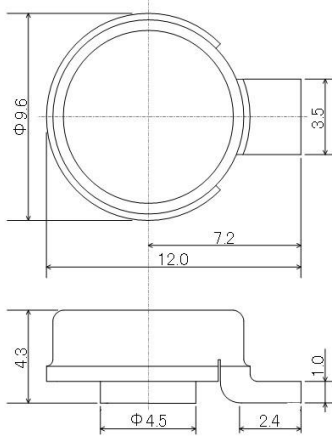
*:Packages is different

**::JEDEC DO-218AB Compatible

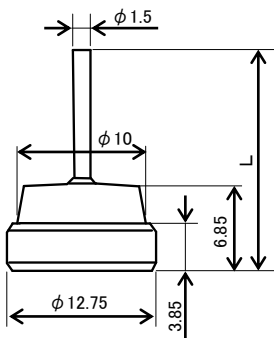
Outline

[Dimensions in mm]

● Outline No.8

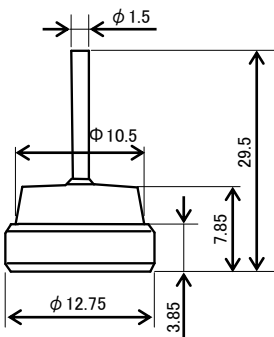


● Outline No.9A, 9B, 9C, 9D



Items	L
9A	19.2
9B	28.5
9C	17.0

● Outline No.10



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HITACHI

■ HITACHI POWER SEMICONDUCTOR DEVICE OVERSEAS REPRESENTATIVES

United States of America

Hitachi America, Ltd.
Industrial and Infrastructure Systems Division
50 Prospect Avenue Tarrytown, NY 10591
Telephone:<1>(914) 631-0600
Fax :<1>(914) 631-3672

United Kingdom

Hitachi Europe Ltd. Power Device Division
Sefton Park, Bells Hill, Stoke Poges
Buckinghamshire, SL2 4HD
Telephone:<44>(1628) 585151
Mail : pdd@hitachi-eu.com
Webpage : <http://pdd.hitachi.eu/>

Shanghai

Hitachi (China) Ltd. Shanghai Branch
18th Floor, Rui Jin Building, No.205, Maoming Road (S)
Shanghai 200020, China
Telephone:<86>(21) 6472-1002
Fax :<86>(21) 6472-9080

Hong Kong

Hitachi East Asia Ltd.
8/F, Building 20E, Phase 3, Hong Kong Science Park,
Pak Shek Kok, New Territories, Hong Kong
Telephone:<852>2735-9218
Fax :<852>2375-3192

Korea

Hitachi Korea Ltd.
10th Floor, Young Poong Bldg., 41, Cheonggyecheon-ro,
Jongno-gu, Seoul, 03188, Korea
Telephone:<82>(2) 6050-8564
Fax :<82>(2) 6050-8569

Thailand

Hitachi Asia (Thailand) Co., Ltd.
12th Floor, Ramaland Bldg, No.952, Rama IV Road, Suriyawongse,
Bangrak, Bangkok 10500, Thailand
Telephone:<66>(2) 632-9292
Fax :<66>(2) 632-9299

India

Hitachi India Pvt. Ltd.
Ground & First floor, Tower B, World Mark 1,
Asset Number 11, Aerocity, NH-8, New Delhi-110037, India
Telephone:<91>(11) 4060-5252
Fax :<91>(11) 4060-5253

■ For inquiries relating to the product, please contact above overseas representatives or below.

Hitachi Power Semiconductor Device, Ltd.

Sales Department, Business Management Division
Akihabara Daibiru Building, 18-13 Soto-Kanda 1-chome
Chiyoda-ku, Tokyo, 101-8608 Japan

TEL:<81>(3)4564-5147 FAX:<81>(3)4564-6251
URL; <http://www.hitachi-power-semiconductor-device.co.jp/en/>

お問合せ先

株式会社 日立パワーデバイス

東京本社

〒101-8010 東京都千代田区外神田一丁目18番13号(秋葉原ダイビル)

(03) 4564-5147

ホームページ : <http://www.hitachi-power-semiconductor-device.co.jp>

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株式会社日立パワーデバイス 営業・マーケティング本部

〒101-8608 東京都千代田区外神田一丁目18番13号(秋葉原ダイビル) TEL (03)4564-5147 FAX (03)4564-6251

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