

Minebea Power Semiconductor Device Inc.

Power Diode Status List

Date: Aug. 2025

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 Diode

Type	Absolute maximum ratings			Characteristics			Outline	RoHS Status	Production year	Production status
	PRSM (kW)	V _{DC} (V)	T _j (°C)	V _Z (V)		Test Current (mA)				
				Min.	Max.					
ZSH5MA27 (※)	3.0kW	18	-40 ~+150	24.0	30.0	10	6A	S.C	2000	M
ZSH5MA27(A)(※)	62A									N
ZSH5MC27 (※)	3.2kw							S.C	2007	M
ZSH5MC27(S)(※)	65A									
ZSH5MAZ27	3.4kW 70A	22		36.0	44.0	10	6B	S.C	2009	M
ZSH8MD27	5.7kW 130A							S.C	2015	M
ZSH8MD40	5.7kW 80A	32					S.C	2015	M	
ZSH5MT27C	3.4kW 70A	22					24.0	30.0	10	7A
ZSH5MT27(Z)	4.3kW 90A			O						
ZSH5MT40C	4.3kW 62A	32		M						
ZSH5MT48C	4.3kW 50A	39		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 Diode

◆Surface Mount Type

Type		Absolute maximum ratings			Characteristics			Outline	RoHS Status	Production year	Production status					
		PRSM (kW)	VRM (V)	Tj (°C)	Vz (V)		Test Current (mA)									
					Min.	Max.										
DAM1MB	12	0.6	-65 ~+185	11.4	12.7	1	4A	S.C	2013	M						
	13			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			12	1.2	-65 ~+185				11.4	12.7	1	4B	S.C	2013	O
				13						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		12	1.8	-65 ~+185			11.4	12.7	1	4C	S.C	2013				M
		13					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								

High Voltage – Fast Recovery Diode

◆ 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
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]			23 (5)	40	1F	S.C	1998	M

* [] : Frequency, unit (kHz)

High Voltage – Fast Recovery Diode (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 Diode (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 Diode

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

◆ Standard Type Diode

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

Self-powered Synchronous Rectifying device

◆Self-powered Synchronous Rectifying device

Type	Absolute maximum ratings				Characteristics					Outline	RoHS Status	Production year	Production status
	VRRM (V)	I _{F(AV)} (A)	I _{FSM} (A)	T _{STG} (°C)	R _{DS(ON)} (mΩ)		V _F (V)		I _R (μA)				
					Typ.	Max.	Typ.	Max.	Max				
MSB25A6	600	25	550	-55~+150	37 (TBD)	44 (TBD)	0.80	TBD	320	11	S.C	2026	U
MSB25A6L									160				
MSB25A6N													
MSB15A6	600	15	400 (TBD)	-55~+150	70 (TBD)	80 (TBD)	TBD	TBD	TBD	11	S.C	2026	U
MSB15A6L													
MSB15A6N													

Discontinued

◆General-Use Rectifier Diode

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} (μs)				
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			-40 ~+165						
J	1,000									
V06C	200	1.1	35	-65 ~+175	1.4 (1.1)	—	2A	S.C	1976	D
E	400									
G	600									
J	800									
V03C	200	1.3	40		1.1 (1.3)	—	2A	S.C	1975	
E	400									
G	600									
J	800									
U05B	100	2.5	100		1.1 (2.5)	—	2B	S.C	1975	D
C	200									
E	400									
G	600									
J	800									
U15B	100									
C	200									
E	400									
G	600	60								
J	800									

◆Zener Diode

Type	Absolute maximum ratings			Characteristics			Outline	RoHS Status	Production year	Production status
	P (W)	P _{RS} M (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				

Discontinued

◆Fast Recovery Diode

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} (μs)				
DFG1D1	100	1.0	30	-65 ~+150	1.5 (1.0)	50ns	2A	S.C	1986	D
2	200									
4	400									
DFG1C1	100	1.0	35		1.2 (1.0)	0.1	2A	S.C	1985	D
2	200									
4	400									
6	600		30		1.6 (1.0)					
8	800									
DFG3A1	100	3.0	70		1.3 (3.0)	0.1	2B	S.C	1985	D
2	200									
4	400									
V19B	100	1.0	30		1.2 (1.0)	0.2	2A	S.C	1977	D
C	200									
E	400									
G	600									
DFG1A8	800	1.0	40	-65 ~+165	1.2 (1.0)	0.2	2A	S.C	1982	D
H114B	200	1.0	40	-40 ~+150	1.15 (1.0)	0.2	2A	S.C	1989	D
D	400									
E	500									
F	600									
U19B	100	2.5	80	-65 ~+150	1.3 (2.5)	0.2	2B	S.C	1978	D
C	200									
E	400									
DFG2A6	600	2.5	80	-65 ~+165	1.3 (2.5)	0.2	2B	S.C	1982	D
8	800									
V11J	800	0.4	30	-65 ~+150	2.5 (0.4)	0.4	2A	S.C	1975	D
L	1,000									
M	1,300									
N	1,500									
V09C	200	0.8	35	-65 ~+165	1.6 (0.8)	0.4	2A	S.C	1975	D
E	400									
G	600									
U07J	800	1.0	50	-65 ~+140	2.5 (1.0)	0.4	2B	S.C	1975	D
L	1,000									
M	1,300									
N	1,500									
U06C	200	2.0	80	-65 ~+150	1.2 (2.0)	0.4	2B	S.C	1975	D
E	400									
G	600									

◆Controlled Avalanche Diode

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	600	1.0	1,000	45	-65 ~+175	1.0 (1.0)	2A	S.C	1989	D
H	800				-65 ~+165					
J	1,000									
V08E	400	1.1	40	35	-65 ~+175	1.4 (1.1)	2A	S.C	1975	D
G	600									
J	800									
V07E	400	1.3	40	40	-65 ~+175	1.1 (1.3)	2A	S.C	1975	D
G	600									
J	800									
V17A	50	1.3	1,500	50	-40 ~+165	1.1 (1.3)	2A	S.C	1975	D
B	100									
C	200									
D	300									
E	400									
U17B	100	2.5	3,000	100	-40 ~+175	1.1 (2.5)	2B	S.C	1975	D
C	200									
D	300									
E	400									

Discontinued

◆ Surge Suppressor Diode

Type	Absolute maximum ratings			Characteristics			Outline	RoHS Status	Production status
	PRSM (kW)	VDC (V)	Tj (°C)	Vz (V)		Test Current (mA)			
				Min.	Max.				
DAM1MA/3MA10	0.6/1.8	7	-40~+150	9.4	10.6	25/75	4A/4C	S.C	D
11		8		10.4	11.6	25/75			D
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 Diode

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} (μs)			
DSA3A1	100	3.0	120	-40~+150	1.0 (3.0)	-	2C	S.C	D
2	200								
4	400								

◆ General-Use Rectifier Diode

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} (μs)			
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								

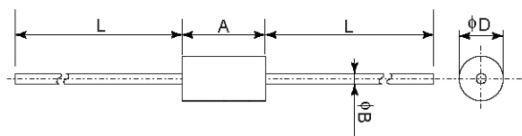
◆ Fast Recovery Diode

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	D
DFM3MF2	200	3.0	50	-40 ~+150	0.95 (3.0)	35	4B	S.C	1997	D

Outline

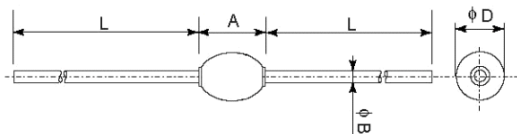
[Dimensions in mm]

● Outline No.1



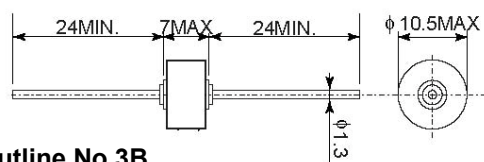
Items	A	ϕD	ϕB	L (Min.)
1A	3	2.5	0.6	28
1B	5	2.65	0.6	27
1C	5	2.65	0.8	27
1D	6	3.6	0.8	26
1E	7.5	6.4	1.2	26
1F	6.5	2.5	0.5	28
1G	10	2.5	0.5	26
1H	10	3	0.6	26,28
1J	8	3	0.6	28
1K	6.5	2.5	0.5	27
1L	8	3	0.6	27
1M	5	2.5	0.5	27

● Outline No.2

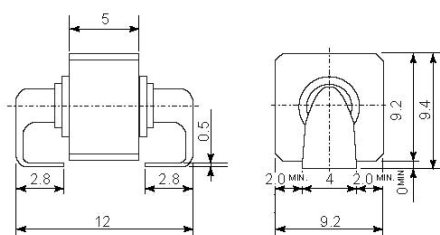


Items	A (Max.)	ϕD (Max.)	ϕB	L (Min.)
2A	5	3.5	0.8	29
2B	7	5	1.2	28
2C	7	5	1.2	27

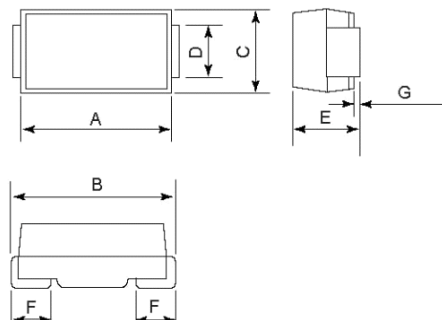
● Outline No.3A



● Outline No.3B

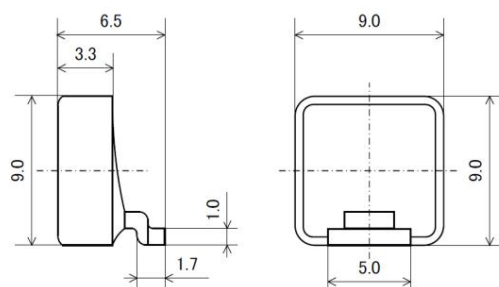


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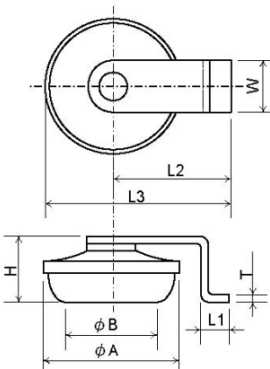


Items	A	B	C	D	E	F	G
4A	4.3	4.7	2.5	1.5	2.0	1.2	0.1
4B	4.4	5.4	3.6	2.0	2.3	1.2	0.2
4C	7.0	7.6	4.0	2.0	2.5	1.4	0.2

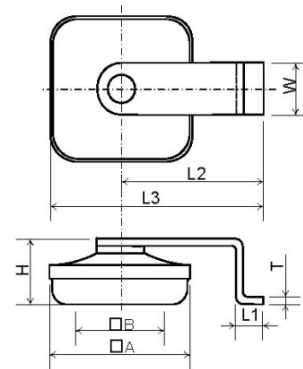
● Outline No.5



● 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

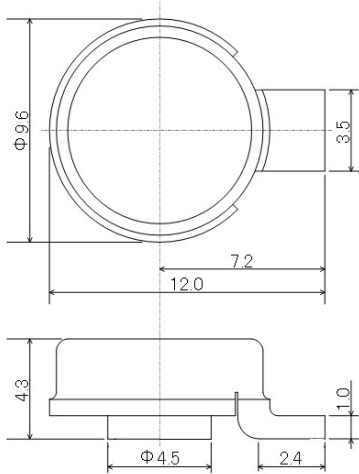
*: Packages is different

** : JEDEC DO-218AB Compatible

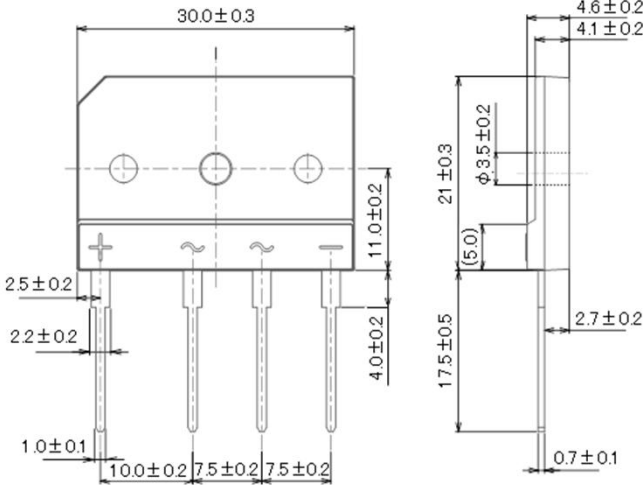
Outline

[Dimensions in mm]

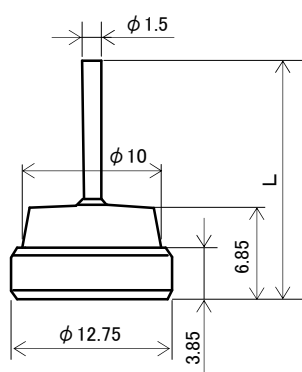
●Outline No.8



●Outline No.11

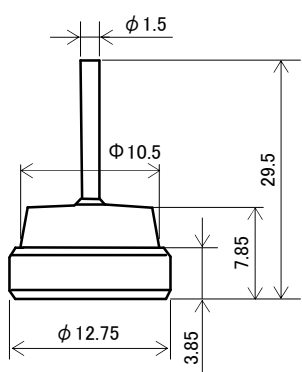


●Outline No.9A, 9B, 9C, 9D



Items	L
9A	19.2
9B	28.5
9C	17.0

●Outline No.10



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