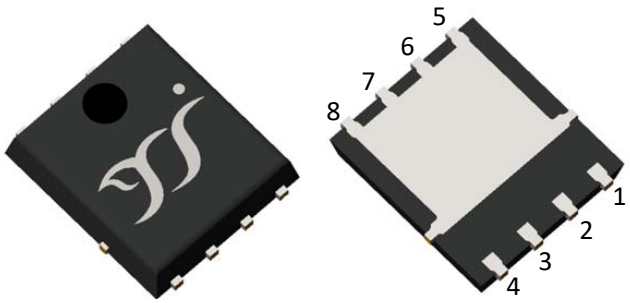
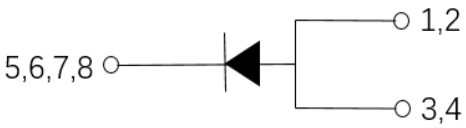
Schottky Diodes





Features

- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability
- Part no. with suffix “Q” means AEC-Q101 qualified

Typical Applications

Typical applications are in switching power supplies, converters, automotive, freewheeling diodes, and reverse battery protection.

Mechanical Data

- **Package**: PDFN5060
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity**: As marked

■Maximum Ratings (Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	MBR1060P5Q
Device marking code			MBR1060P5
Repetitive peak reverse voltage	V_{RRM}	V	60
Average Rectified Output Current @60Hz -sine wave, T_C=120℃	I_O	A	10
Forward Surge Current (Non-repetitive) @60Hz half-sine wave,1 cycle, T_a=25℃	I_{FSM}	A	150
Current Squared Time @1ms≤t≤8.3ms T_J=25℃	I^2t	A^2s	93
Storage Temperature	T_{stg}	℃	-55 ~ +150
Junction Temperature	T_J	℃	-55 ~ +150

■Electrical Characteristics（Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Typ	Max
Instantaneous forward voltage	V_F	V	I_F=10A	T_J=25℃	0.69	0.76
			I_F=10A	T_J=125℃	0.6	0.67
Typical junction capacitance	C_J	pF	V_R=4V, f=1 MHz		420	
Reverse recovery time	T_{RR}	ns	I_F=0.5A,I_R=1A,Irr=0.25A		17	
Instantaneous reverse current	I_R	mA	V_R=60V	T_J=25℃	-	0.15
				T_J=125℃	-	10

■Characteristics (Typical)

Fig.1:Forward Current Derating Curve

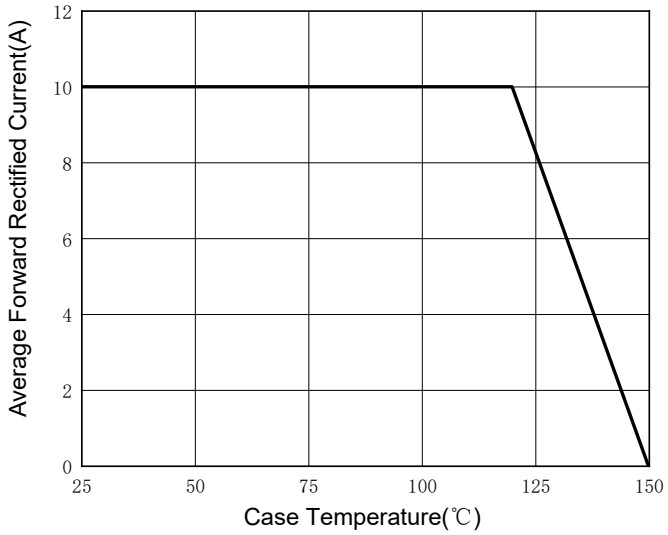


Fig.2: Forward Surge Current Capability

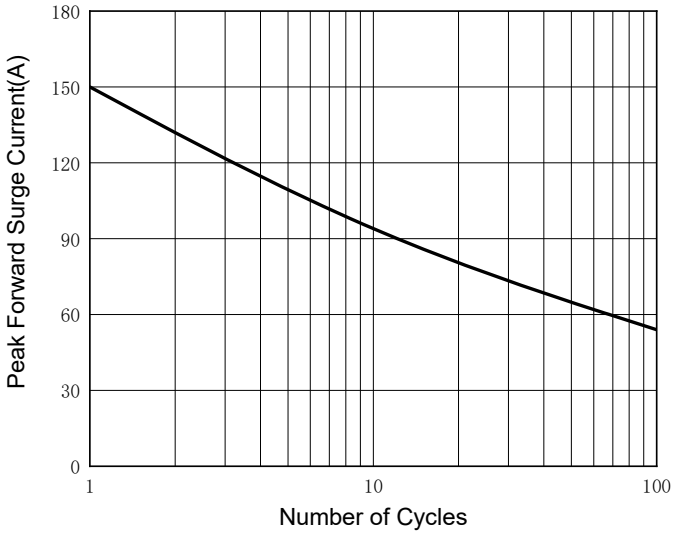


Fig.3:Typical Instantaneous Forward Characteristics

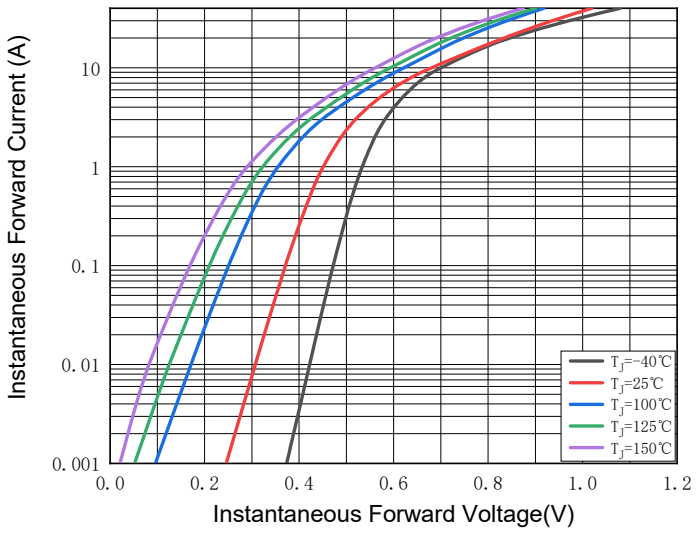


Fig.4:Typical Reverse Leakage Characteristics

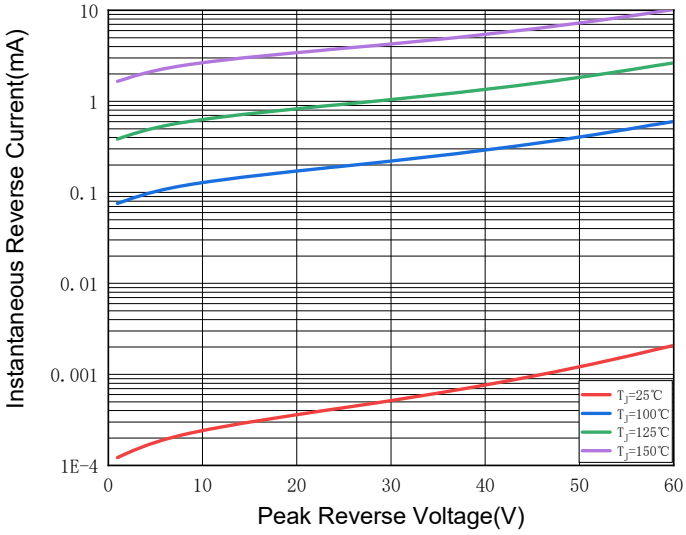


Fig.5:Typical Junction Capacitance

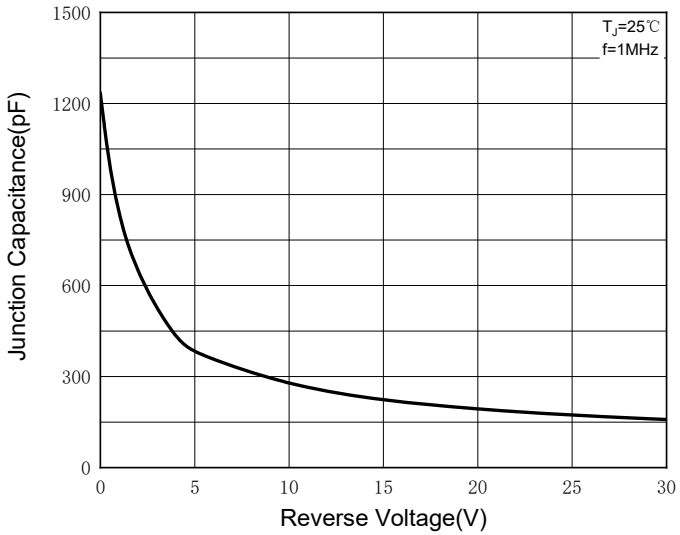
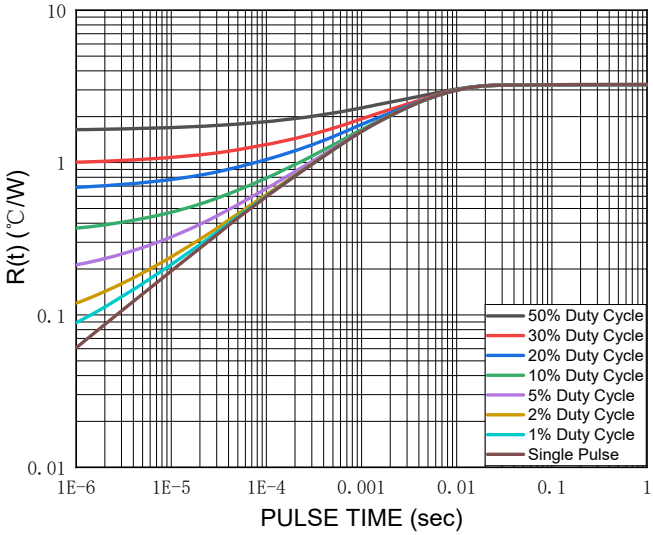


Fig.6:Transient Thermal Response,Junction to Case



■Thermal Characteristics

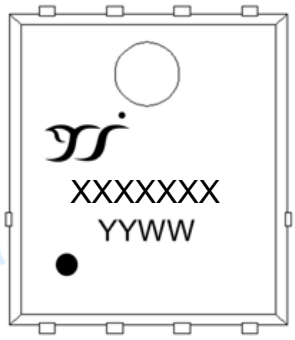
PARAMETER	SYMBOL	UNIT	MBR1060P5Q
Typical thermal resistance	$R_{\theta J-A}$	℃/W	55(1)
	$R_{\theta J-C}$	℃/W	3.5(2)

Note:
(1)Thermal resistance between junction and ambient mounted on P.C.B with 25.4mm*25.4mm copper pad areas.
(2)Thermal resistance between junction and case(bottom).

■Ordering Information (Example)

PREFERED P/N	UNIT WEIGHT(g)	MINIIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MBR1060P5Q	Approximate 0.105	5000	10000	100000	13“ reel

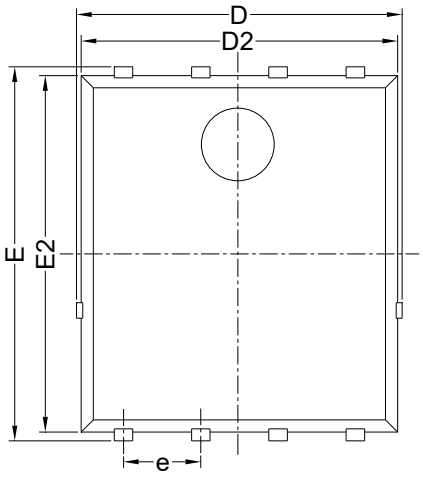
■ Marking Information



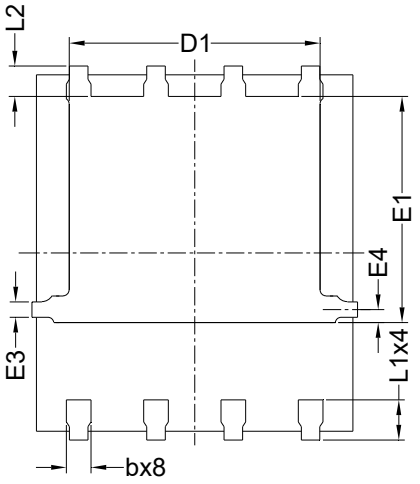
Note:
1. All marking is at middle of the product body
2. All marking is in laser printing
3. XXXXXX is marking code, like MBR1060P5Q marking code is MBR1060P5
4. Body color: Black
5. YYWW is date code, “YY” is year. “WW” is week.

For instance:
The 17th week of 2022, date code is 2217
The 17th week of 2023, date code is 2317

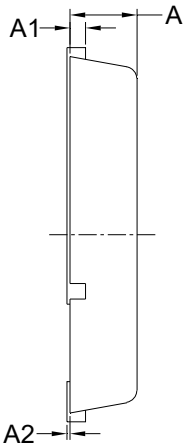
■Outline Dimensions & Suggested Pad Layout



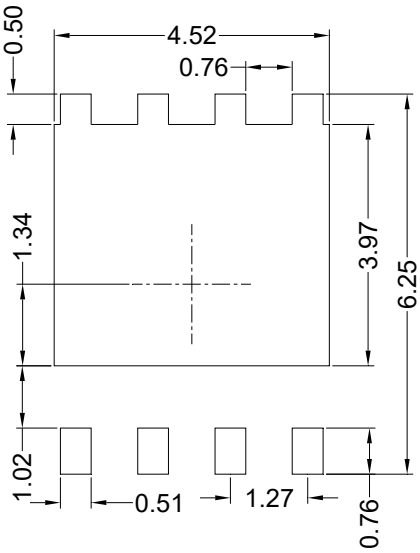
Top View



Bottom View



Side View



Suggested Solder Pad Layout
Top View

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
D	5.15	5.35	5.55
E	5.95	6.15	6.35
A	1.00	1.10	1.20
A1		0.254 BSC	
A2			0.10
D1	3.92	4.12	4.32
E1	3.52	3.72	3.92
D2	5.00	5.20	5.40
E2	5.66	5.86	6.06
E3		0.254 REF	
E4		0.21 REF	
L1	0.56	0.66	0.76
L2		0.50 BSC	
b	0.31	0.41	0.51
e		1.27 BSC	

Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.10mm.
3.The pad layout is for reference purposes only.

Disclaimer

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The product listed herein is designed to be used with automotive electronics,are not designed for use in medical, lifesaving, lifesust aining,or military,Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improp er use of sale.

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