

Schottky Barrier Diode Quick Reference

Schottky Barrier Diodes Product lineup

Application	V _{RM} (V)	Package												
		1006 Size	1608 Size				2012 Size				2616 Size	2916 Size		
		VMD2	EMD2 (SOD-523)	EMD3 (SOT-416)	EMD4	UMD2 (SOD-323)	UMD3 (SOT-323)	UMD4 (SOT-343)	UMD6 (SOT-363)	PMDU (SOD-123)	SMD3 (SOT-346)	SMD5 (SC-74A)	SMD6 (SOT-457)	PMDS (SOD-106)
Small signal (I _o < 0.5A)	30	NEW RB520G-30 NEW RB521G-30	RB520S-30 RB521S-30	NEW RB548W NEW RB480Y NEW RB481Y				RB481K NEW RB530XN NEW RB531XN						
	40~50		RB751S-40 RB715W			RB501V-40 RB500V-40 RB751V-40	RB451F RB450F RB706F-40 RB715F RB717F	RB480K	RB731XN		RB420D RB421D RB425D RB495D RB705D RB706D-40	RB471E	RB731U	
Rectification (I _o ≥ 0.5A)	25~30					RB551V-30	RB461F			NEW RB160M-30 NEW RB161M-20	RB491D			RB053L-30 RB063L-30 RB081L-20 RB083L-20
	40~60										RB400D RB411D			RB160L-60 RB160L-40 RB161L-40 RB060L-40 RB050L-40 RB051L-40

Surface mount small signal type (I_o < 0.5A)

Part no.		Absolute maximum ratings (Ta=25°C) *1					Electrical characteristics (Ta=25°C) *1				Package	Equivalent circuit diagram
Part no.	Taping code	V _{RM} (V)	V _R (V)	I _o (mA)	I _{FSM} (A) 60Hz.1~	V _F (V) Max.	I _F (mA)	I _r (μA) Max.	V _R (V)			
NEW RB521G-30	T2R	—	30	100	0.5	0.35	10	10	10	VMD2		
NEW RB520G-30	T2R	—	30	100	0.5	0.45	10	0.5	10	VMD2		
NEW RB521S-30	TE61	—	30	200	1	0.50	200	30	10	EMD2		
NEW RB520S-30	TE61	—	30	200	1	0.60	200	1	10	EMD2		
NEW RB751S-40	TE61	40	30	30	0.2	0.37	1	0.5	30	EMD2		
NEW RB501V-40	TE-17	45	40	100	1	0.55	100	30	10	UMD2		
NEW RB500V-40	TE-17	45	40	100	1	0.45	10	1	10	UMD2		
NEW RB751V-40	TE-17	40	30	30	0.2	0.37	1	0.5	30	UMD2		
NEW RB715W	TL	40	40	30	0.2	0.37	1	1	10	EMD3		
NEW RB715F	T106	40	40	30	0.2	0.37	1	1	10	UMD3		
NEW RB425D	T146	40	40	100	1	0.55	100	30	10	SMD3		
NEW RB705D	T146	40	40	30	0.2	0.37	1	1	10	SMD3		
NEW RB495D	T146	40	25	*400	2	0.50	200	70	25	SMD3		
NEW RB717F	T106	40	40	30	0.2	0.37	1	1	10	UMD3		
NEW RB548W	TL	—	30	100	0.5	0.45	10	0.5	10	EMD3		
NEW RB706F-40	T106	45	40	30	0.2	0.37	1	1	10	UMD3		
NEW RB706D-40	T146	45	40	30	0.2	0.37	1	1	10	SMD3		
NEW RB451F	T106	40	40	100	1	0.55	100	30	10	UMD3		
NEW RB450F	T106	45	40	100	1	0.45	10	1	10	UMD3		
NEW RB421D	T146	40	40	100	1	0.55	100	30	10	SMD3		
NEW RB420D	T146	40	40	100	1	0.45	10	1	10	SMD3		
NEW RB480Y	T2R	—	30	100	1	0.53	100	1	10	EMD4		
NEW RB481Y	T2R	—	30	100	1	0.43	100	30	10	EMD4		
NEW RB480K	TL	45	40	100	1	0.60	100	1	10	UMD4		
NEW RB481K	TL	30	30	200	1	0.50	200	30	10	UMD4		
NEW RB471E	T148	40	40	100	1	0.55	100	30	10	SMD5		
NEW RB531XN	TR	—	30	100	1	0.43	100	20	10	UMD6		
NEW RB530XN	TR	—	30	100	1	0.53	100	1	10	UMD6		
NEW RB731XN	TR	40	40	30	0.2	0.37	1	1	10	UMD6		
NEW RB731U	T108	40	40	30	0.2	0.37	1	1	10	SMD6		

Note : *1Value/element, *2Value/2 circuits.

Surface mount rectifier type (I_o ≥ 0.5A)

Part no.		Absolute maximum ratings (Ta=25°C) *1					Electrical characteristics (Ta=25°C) *1				Package	Equivalent circuit diagram
Part no.	Taping code	V _{RM} (V)	V _R (V)	I _o (A)	I _{FSM} (A) 60Hz.1~	V _F (V) Max.	I _F (mA)	I _r (μA) Max.	V _R (V)			
NEW RB551V-30	TE-17	30	20	0.5	2	0.36	0.1	0.1	20	UMD2		
NEW RB160M-30	TR	30	30	1.0	30	0.48	1.0	0.05	30	PMDU		
NEW RB161M-20	TR	25	20	1.0	30	0.35	1.0	0.7	20	PMDU		
NEW RB160L-60	TE25	60	60	1.0	30	0.58	1.0	1.0	60	PMDS		
NEW RB160L-40	TE25	40	40	1.0	70	0.55	1.0	0.1	40	PMDS		
NEW RB161L-40	TE25	40	20	1.0	70	0.40	1.0	1.0	20	PMDS		
NEW RB060L-40	TE25	40	40	2.0	70	0.50	2.0	1.0	40	PMDS		
NEW RB063L-30	TE25	30	30	2.0	70	0.395	2.0	0.2	30	PMDS		
NEW RB050L-40	TE25	40	40	3.0	70	0.55	3.0	1.0	40	PMDS		
NEW RB051L-40	TE25	40	20	3.0	70	0.45	3.0	1.0	20	PMDS		
NEW RB053L-30	TE25	30	30	3.0	70	0.42	3.0	0.2	30	PMDS		
NEW RB081L-20	TE25	25	20	5.0	70	0.45	5.0	0.7	20	PMDS		
NEW RB083L-20	TE25	25	20	5.0	70	0.39	3.0	0.5	20	PMDS		
NEW RB461F	T106	25	20	0.7	3	0.49	0.7	0.20	20	UMD3		
NEW RB411D	T146	40	20	0.5	3	0.50	0.5	0.03	10	SMD3		
NEW RB400D	T146	40	40	0.5	3	0.55	0.5	0.05	30	SMD3		
NEW RB491D	T146	25	20	1.0	3	0.45	1.0	0.20	20	SMD3		

Note : *1Value/element.

Super small schottky diode (100mA~200mA)

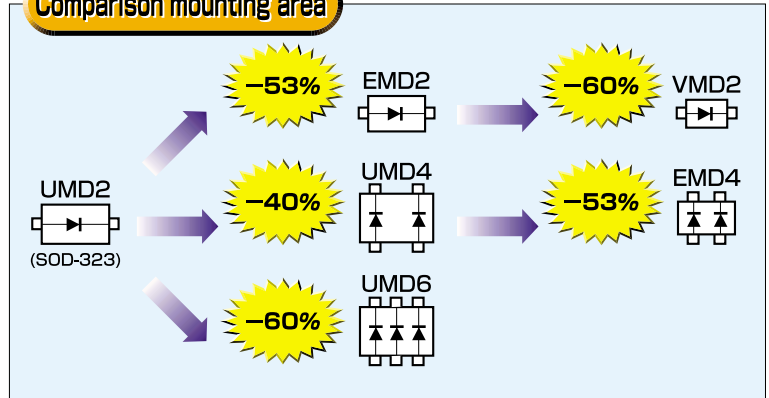
Applications










- Cellular Phones
- Digital camera
- Digital video camera
- PC, PDA



Ultra small body size yet keep 100mA-200mA capability. single die and multiple dies (up to 3 dies) in one package available in different body size.

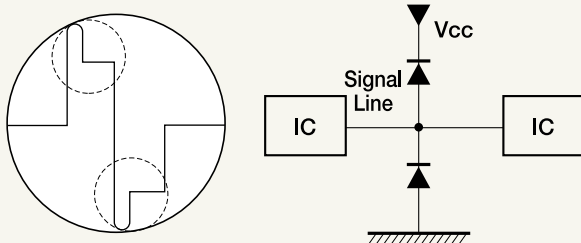
Comparison mounting area



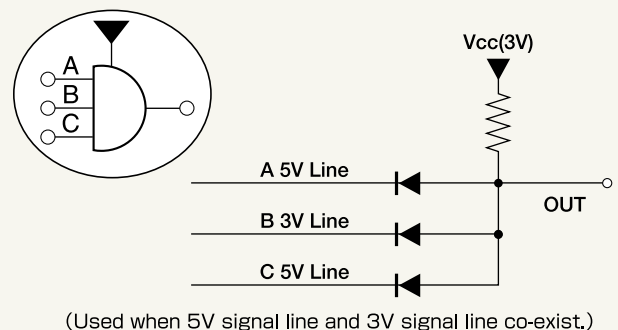
Package	Low V_F & low I_R	Super Low V_F	Circuit
 1006 size VMD2	RB520G-30 $V_F=0.45V$ $I_R=0.5\mu A$	RB521G-30 $V_F=0.35V$ $I_R=10\mu A$	
 1208 size EMD2 (SOD-523)	RB520S-30 $V_F=0.6V$ $I_R=1\mu A$	RB521S-30 $V_F=0.5V$ $I_R=30\mu A$	
 1608 size EMD3 (SOT-416)	RB548W $V_F=0.45V$ $I_R=0.5\mu A$	—	
 1612 size EMD4	RB480Y $V_F=0.53V$ $I_R=1\mu A$	RB481Y $V_F=0.43V$ $I_R=30\mu A$	
 2125 size UMD4 (SOT-343)	RB480K $V_F=0.6V$ $I_R=1\mu A$	RB481K $V_F=0.5V$ $I_R=30\mu A$	
 2125 size UMD6 (SOT-363)	RB530XN $V_F=0.53V$ $I_R=1\mu A$	RB531XN $V_F=0.43V$ $I_R=20\mu A$	

Example circuit: absorbing signal line over-shoot

As the frequency of the clock increases, the wave changes as shown below. Our product adsorbs the over-shoot.



Example circuit: for signal line level shift



Schottky barrier diode (Silicon Epitaxial Planer)

Low IR

RB520G-30

APPLICATION

Rectifying small power

FEATURE

- Ultra Small mold type (VMD2)
- High reliability

Mass per piece

0.9mg/pcs

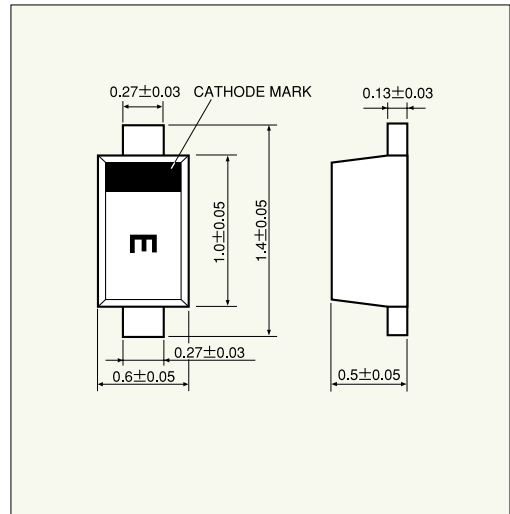
ABSOLUTE MAXIMUM RATING (Ta=25°C)

Characteristic	Symbol	Limits
Reverse voltage(DC)	V_R	30V
Average rectified forward current	I_o	100mA
Forward current surge peak (60Hz·1 μ s)	I_{FSM}	500mA
Junction temperature	T_j	125°C
Storage temperature	T_{stg}	-40~125°C

ELECTRICAL CHARACTERISTIC (Ta=25°C)

Characteristic	Symbol	Test condition	Standard
Forward current	V_F	$I_F=10mA$	0.45V Max.
Reverse current	I_R	$V_R=10V$	0.5 μ A Max.

DIMENSION (UNIT:mm)



Schottky barrier diode (Silicon Epitaxial Planer)

Low VF

RB521G-30

APPLICATION

Rectifying small power

FEATURE

- Ultra Small mold type (VMD2)
- High reliability

Mass per piece

0.9mg/pcs

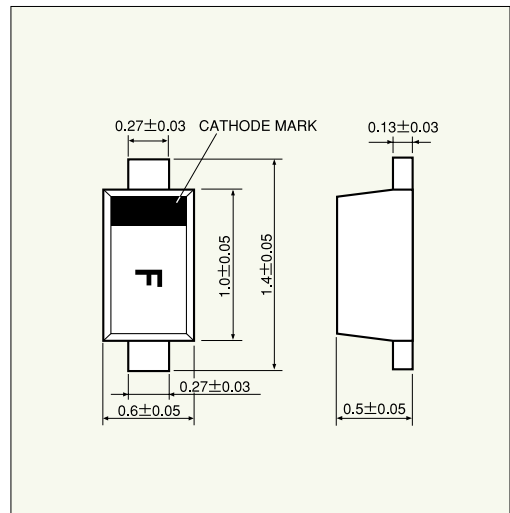
ABSOLUTE MAXIMUM RATING (Ta=25°C)

Characteristic	Symbol	Limits
Reverse voltage(DC)	V_R	30V
Average rectified forward current	I_o	100mA
Forward current surge peak (60Hz·1 μ s)	I_{FSM}	500mA
Junction temperature	T_j	125°C
Storage temperature	T_{stg}	-40~125°C

ELECTRICAL CHARACTERISTIC (Ta=25°C)

Characteristic	Symbol	Test condition	Standard
Forward current	V_F	$I_F=10mA$	0.35V Max.
Reverse current	I_R	$V_R=10V$	10 μ A Max.

DIMENSION (UNIT:mm)



Schottky barrier diode (Silicon Epitaxial Planer)

Low IR

RB520S-30

APPLICATION

Rectifying small power

FEATURE

- Ultra Small mold type (EMD2)
- High reliability

Mass per piece

1.5mg/pcs

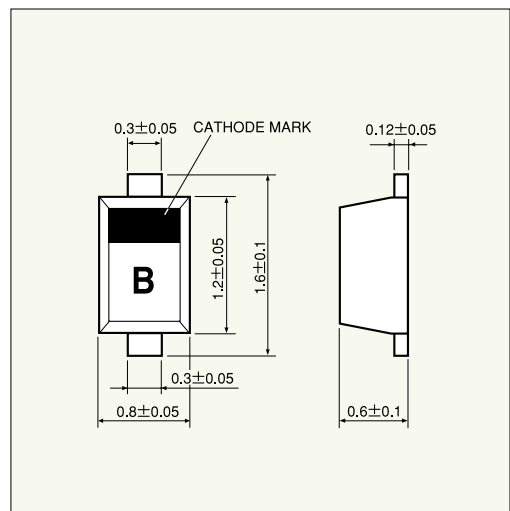
ABSOLUTE MAXIMUM RATING (Ta=25°C)

Characteristic	Symbol	Limits
Reverse voltage(DC)	V_R	30V
Average rectified forward current	I_o	200mA
Forward current surge peak (60Hz·1 μ s)	I_{FSM}	1A
Junction temperature	T_j	125°C
Storage temperature	T_{stg}	-40~125°C

ELECTRICAL CHARACTERISTIC (Ta=25°C)

Characteristic	Symbol	Test condition	Standard
Forward current	V_F	$I_F=200mA$	0.60V Max.
Reverse current	I_R	$V_R=10V$	1.0 μ A Max.

DIMENSION (UNIT:mm)



Schottky barrier diode (Silicon Epitaxial Planer)

Low V_F

RB521S-30

APPLICATION

Rectifying small power

FEATURE

- Ultra Small mold type (EMD2)
- High reliability

Mass per piece

1.5mg/pcs

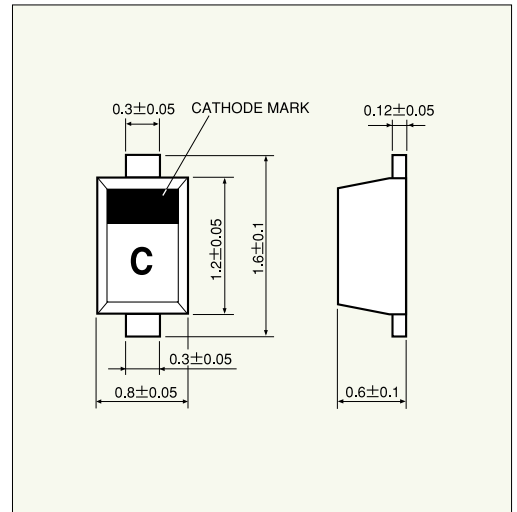
ABSOLUTE MAXIMUM RATING (Ta=25°C)

Characteristic	Symbol	Limits
Reverse voltage(DC)	V _R	30V
Average rectified forward current	I _O	200mA
Forward current surge peak (60Hz~1~)	I _{FSM}	1A
Junction temperature	T _J	125°C
Storage temperature	T _{stg}	-40~125°C

ELECTRICAL CHARACTERISTIC (Ta=25°C)

Characteristic	Symbol	Test condition	Standard
Forward current	V _F	I _F =200mA	0.50V Max.
Reverse current	I _R	V _R =10V	30μA Max.

DIMENSION (UNIT:mm)



Schottky barrier diode (Silicon Epitaxial Planer)

Low I_R

RB548W

APPLICATION

Rectifying small power

FEATURE

- Ultra Small mold type (EMD3)
- High reliability

Mass per piece

2mg/pcs

ABSOLUTE MAXIMUM RATING (Ta=25°C)

Characteristic	Symbol	Limits
Reverse voltage(repetitive peak)	V _{RM}	35V
Reverse voltage(DC)	V _R	30V
Average rectified forward current	I _O *	100mA
Forward current surge peak (60Hz~1~)	I _{FSM} **	0.5A
Junction temperature	T _J	125°C
Storage temperature	T _{stg}	-40~125°C

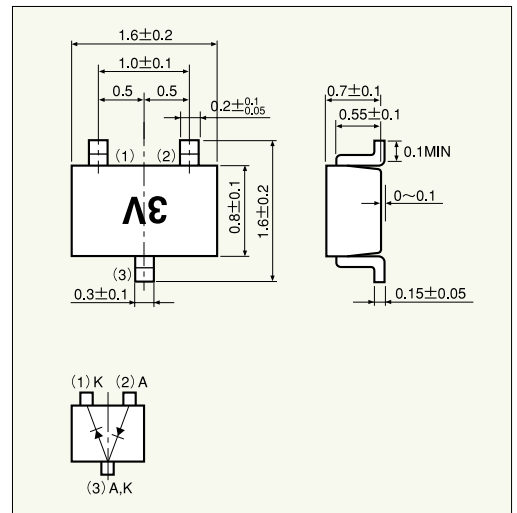
**Value for each device.

ELECTRICAL CHARACTERISTIC (Ta=25°C)

Characteristic	Symbol	Test condition	Standard
Forward current	V _{F1}	I _F =1mA	0.380V Max.
	V _{F2}	I _F =10mA	0.450V Max.
Reverse current	I _R	V _R =10V	0.5μA Max.

**Please pay attention to static electricity when handling.

DIMENSION (UNIT:mm)



Schottky barrier diode (Silicon Epitaxial Planer)

LOW IR

RB480Y

APPLICATION
Rectifying small power

FEATURE
· Ultra Small mold type (EMD4)
· High reliability

Mass per piece
0.9 mg/pcs

ABSOLUTE MAXIMUM RATING (Ta=25°C)

Characteristic	Symbol	Limits
Reverse voltage(DC)	V_R	30V
Average rectified forward current	I_o^{**}	100mA
Forward current surge peak (60Hz·1 \sim)	I_{FSM}^{**}	1A
Junction temperature	T_j	125°C
Storage temperature	T_{stg}	-40~125°C

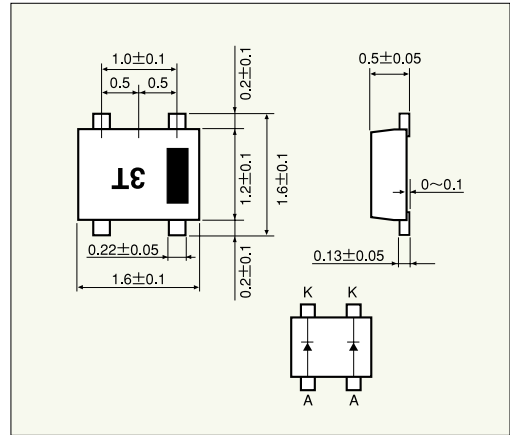
*Value for each device.

ELECTRICAL CHARACTERISTIC (Ta=25°C)

Characteristic	Symbol	Test condition	Standard
Forward current	V_{F1}	$I_F=1mA$	0.38V Max.
	V_{F2}	$I_F=10mA$	0.43V Max.
	V_{F3}	$I_F=100mA$	0.53V Max.
Reverse current	I_R	$V_R=10V$	1 μA Max.

Please pay attention to static electricity when handling.

DIMENSION (UNIT:mm)



Schottky barrier diode (Silicon Epitaxial Planer)

LOW V_F

RB481Y

APPLICATION
Rectifying small power

FEATURE
· Ultra Small mold type (EMD4)
· High reliability

Mass per piece
2.6 mg/pcs

ABSOLUTE MAXIMUM RATING (Ta=25°C)

Characteristic	Symbol	Limits
Reverse voltage(DC)	V_R	30V
Average rectified forward current	I_o^{**}	100mA
Forward current surge peak (60Hz·1 \sim)	I_{FSM}^{**}	1A
Junction temperature	T_j	125°C
Storage temperature	T_{stg}	-40~125°C

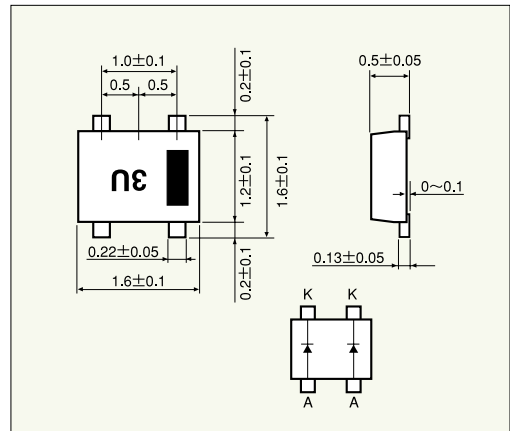
*Value for each device.

ELECTRICAL CHARACTERISTIC (Ta=25°C)

Characteristic	Symbol	Test condition	Standard
Forward current	V_{F1}	$I_F=1mA$	0.28V Max.
	V_{F2}	$I_F=10mA$	0.33V Max.
	V_{F3}	$I_F=100mA$	0.43V Max.
Reverse current	I_R	$V_R=10V$	30 μA Max.

Please pay attention to static electricity when handling.

DIMENSION (UNIT:mm)



Schottky barrier diode (Silicon Epitaxial Planer)

LOW IR

RB480K

APPLICATION
Rectifying small power

FEATURE
· Small mold type (UMD4)
· High reliability

Mass per piece
6.5 mg/pcs

ABSOLUTE MAXIMUM RATING (Ta=25°C)

Characteristic	Symbol	Limits
Reverse voltage(repetitive peak)	V_{RM}	45V
Reverse voltage(DC)	V_R	40V
Average rectified forward current	I_o^{**}	100mA
Forward current surge peak (60Hz·1 \sim)	I_{FSM}^{**}	1A
Junction temperature	T_j	125°C
Storage temperature	T_{stg}	-40~125°C

*Value for each device.

ELECTRICAL CHARACTERISTIC (Ta=25°C)

Characteristic	Symbol	Test condition	Standard
Forward voltage	V_{F1}	$I_F=10mA$	0.45V Max.
	V_{F2}	$I_F=100mA$	0.60V Max.
Reverse current	I_{R1}	$V_R=10V$	1 μA Max.
	I_{R2}	$V_R=40V$	5 μA Max.
Capacitance between Terminals	C_{t1}	$V_R=10V$ $f=1MHz$	6.0pF Typ.
	C_{t2}	$V_R=0V$	25pF Max.

Please pay attention to static electricity when handling.

DIMENSION (UNIT:mm)

