

2013 New Product

MOS Rectifiers

Product Part Number



SB20L45CT



SBF10L200CT



SBP12S120S

SB F 10 L 200 CT

CT: TO/ITO 3 Lead
 Blank : TO / ITO 2 Lead
 S: TO-277

Reverse Voltage(V)

L: Low Vf
 S: Super Low Vf
 Blank : Standard

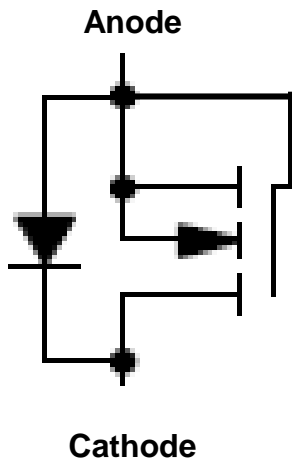
Forward Current (A)

Blank: TO, F : ITO, P:TO-277

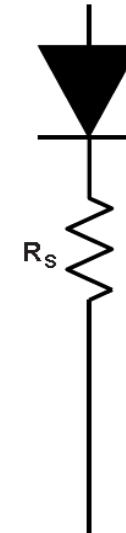
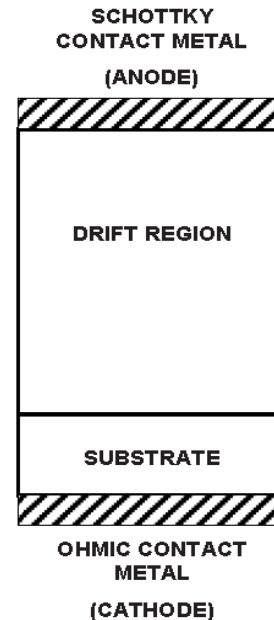
MOS / Barrier Rectifier Series

MOS Rectifier vs. Schottky Diode

- MOS Rectifier doesn't need Schottky Contact
- MOS Rectifier is easier to be tuned for low V_f than Schottky Diode
- Higher reliability, can work at higher temperature

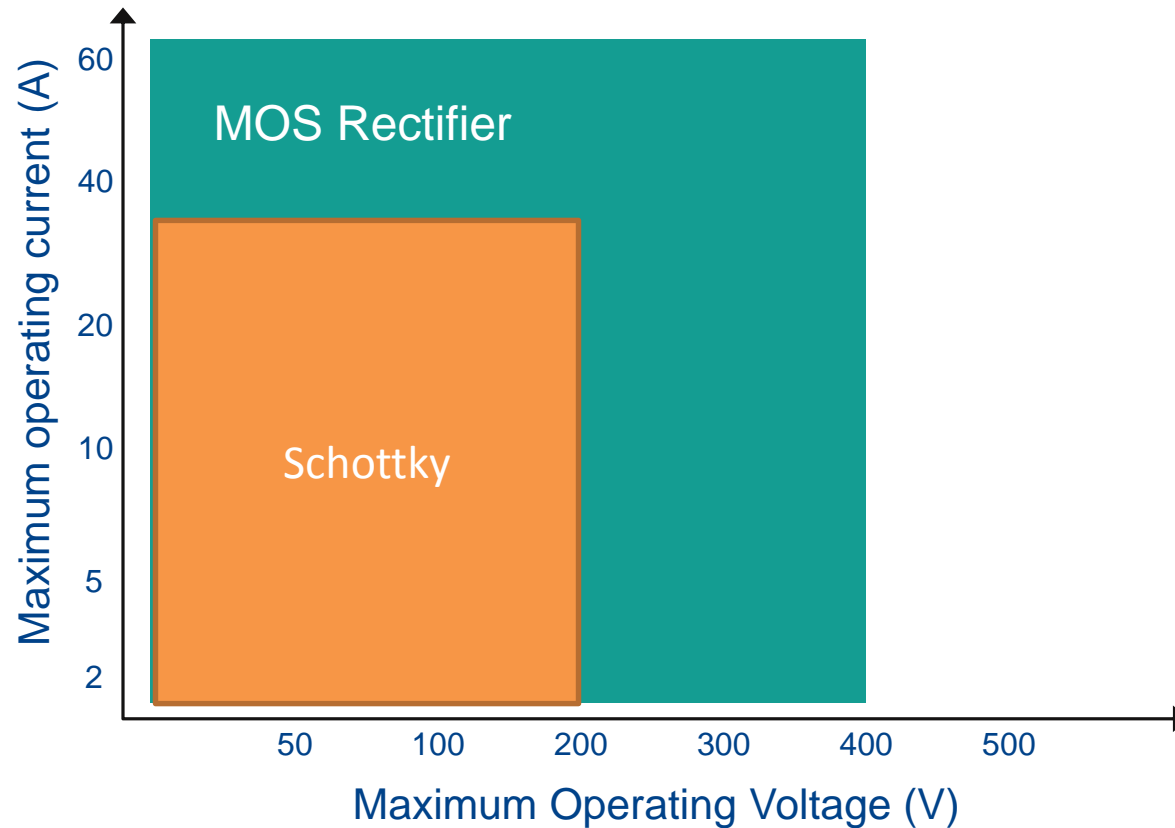


MOS Rectifier
Schematic



MOS Rectifier vs. Schottky Diode

MOS Rectifier has wider range of operating voltage and current than Schottky



MOS Rectifier vs. Schottky Diode

	Forward Voltage (VF)	Leakage Current (IR)	Junction Temperature (Tj)	Reverse Recovery Time(trr)
Super-Fast Rectifiers	High	Low	Tj < 150°C	Very Fast
Standard Rectifiers	High	Low	Tj < 150°C	Slow
Schottky (SBL)	Lower	Medium	Tj < 125°C	Very Fast
Schottky (MBR)	Medium	Low	Tj < 175°C	Very Fast
MOS Rectifier	Lowest	Medium	Tj <175°C	Very Fast

Product Comparison (TO-277 Package)

	Diode SBR10U45SP5	PDC SBP10S45S	PANJIT SVM1045V
VF@1A	281.8	294.2	297.5
VF@3A	328.6	339.0	352.9
VF@5A	357.2	365.8	388.7
VF@10A < 470mV	411.0	416.1	459.1
VB@0.5mA > 45V	53.9	54.2	56.1
IR@45V	65.8	63.2	107.5
Forward Surge	500A	500A	340A
Reverse Surge	5A	5A	5A
ESD	>16KV	>16KV	>16KV
HTRB (Tc)	90C	90C	<85C

Product Comparison (TO-220AB Package)

SPEC (TO-220AB)	PDC SB30L45CT		DIODES SBR30A45CT	
	實測	SPEC	實測	SPEC
		MAX		MAX
VF @25	0.46V @15A	0.5V@15A	0.456V@15A	0.5V@15A 0.6V@30A
IR @25°C	57uA @46V	500uA @45V	387uA @46V	500uA @45V
IR @125°C	2mA @46V	100mA @45V	10mA @46V	100mA @45V
VZ	53V @0.5mA	45V	49V @0.5mA	45V
FS	440A	250A	360A	250A
RS	5A		5A	
ESD	30KV		30KV	
HTRB	125°C		85°C	

MOS Rectifier Application for TO277 Package

Application Field:

1. Adaptors for Table Computer (Apple Ipad series)
2. Charger for Smart Phone (Samsung S4 series)

Advantage :

1. Thin Package Can be used in small-thin consumers' device
2. Extremely low Vf ; Low power dissipation

Suggested Part Number List :

SBP10S45S / SBP10L45S

SBP15S50S / SBP15L50S



Mos Sky Rectifier for TO-277 Package

PDC Part Number	IO(A)	VR(V)	VF(Max)			IR(Max)			IFSM(A)	Package	Competitor "Diodes" PN
			Typ(mV)	Max(mV)	IFM(A)	Typ(mA)	Max(mA)	VR(V)			
SBP5S45S	5	45	350	440 380	5A @ 25 5A @ 125		0.5 100	45V @ 25 45V @ 125	150	TO-277	SBR5U45
SBP5S60S	5	60	380	480 420 520	5A @ 25 5A @ 125 10A @ 25		0.5 100	60V @ 25 60V @ 125	200	TO-277	SBR5U60
SBP8S60S	8	60	460	530 500	8A @ 25 8A @ 125	0.12	0.6 100	60V @ 25 60V @ 125	280	TO-277	SBR8U60
SBP1045S	10	45	490 470	550 530	10A @ 25 10A @ 125	0.03 17	0.45 100	45V @ 25 45V @ 150	180	TO-277	SBR1045
SBP10S45S	10	45	400 420 370	420 470 410	8A @ 25 10A @ 25 10A @ 125	0.05 5 27	0.3 15 75	45V @ 25 45V @ 100 45V @ 150	275	TO-277	SBR10U45
SBP10S60S	10	60	470	510 490	10A @ 125 10A @ 125		0.5 100	60V @ 25 60V @ 125	150	TO-277	SBR10U60
SBP10S100S	10	100	570	700 630	10A @ 25 10A @ 125		0.5 25	100V @ 25 100V @ 125	200	TO-277	SBR10U100
SBP12S120S	12	120	630	800 680	12A @ 25 12A @ 125	2	0.25 35	120V @ 25 120V @ 125	250	TO-277	SBR12U120
SBP15S45S	15	45	420 370	470 410	15A @ 25 15A @ 125	0.05 5 27	0.3 15 75	45V @ 25 45V @ 100 45V @ 150	275	TO-277	SBR15U45
SBP15S50S	15	50	420 370	470 410	15A @ 25 15A @ 125	0.05 5 27	0.3 15 75	50V @ 25 50V @ 100 50V @ 150	275	TO-277	SBR10U50

MOS Rectifier Application for TO Package

Application Field:

Power Supply (150W ~ 500W)

Advantage :

Extremely low Vf ; Low power dissipation

Output Voltage & Suggested Part Number List :

3.3V : SB20L45CT / SB20S45CT

SB30L45CT / SB40S45CT

5V : SB20L60CT / SB20S60CT

SB30L60CT / SB40S45CT

12V : SB20L100CT



Part Number List for Power Application

PDC Part Number	IO(A)	VR(V)	VF(Max)			IR(Max)		IFSM(A)	Package	Competirot "Diodes" PN
			Typ(mV)	Max(mV)	IFM(A)	Max(mA)	VR(V)			
SB10L45CT	10	45		480	5A @ 25	0.5	45V @ 25	150	TO-220AB	SBR10A45CT
SB10L60CT	10	60		520	5A @ 25	0.5	60V @ 25	150	TO-220AB	SBR10A60CT
SB20L45CT	20	45		500 / 600	10A/20A @ 25	0.5	45V @ 25	180	TO-220AB	SBR20A45CT
			410	470	10A @ 125	100	45V @ 125			
SB20L60CT	20	60		650 / 790	10A/20A @ 25	0.5	60V @ 25	250	TO-220AB	SBR20A60CT
			470	560	10A @ 125	100	60V @ 125			
SB20L100CT	20	100		710	10A @ 25	0.1	100V @ 25	250	TO-220AB	SBR20A100CT
			600	640	10A @ 125	10	100V @ 125			
SB30L45CT	30	45		450	15A @ 25	0.5	45V @ 25	250	TO-220AB	SBR30A45CT
			420	450	15A @ 125	100	45V @ 125			
SB30L60CT	30	60		510	15A @ 25	0.5	60V @ 25	250	TO-220AB	SBR30A60CT
			530	550	15A @ 125	60	60V @ 125			
SB10S45CT	10	45		440	5A @ 25	0.5	45V @ 25	200	TO-220AB	SBR10U45CT
SB10S60CT	10	60		480	5A @ 25	0.5	60V @ 25	200	TO-220AB	SBR10U60CT
SB20S45CT	20	45		470	10A @ 25	0.5	45V @ 25	200	TO-220AB	SBR20U45CT
			410	440	10A @ 125	100	45V @ 125			
SB20S60CT	20	60		570	10A @ 25	0.5	40V @ 25	200	TO-220AB	SBR20U60CT
			450	470	10A @ 125	100	40V @ 125			
SB40S45CT	40	45		470	20A @ 25	0.6	45V @ 25	280	TO-220AB	SBR40U45CT
				490	20A @ 125	200	45V @ 125			
SB40S60CT	40	60		550	20A @ 25	0.5	60V @ 25	280	TO-220AB	SBR40U60CT
				540	20A @ 125	100	60V @ 125			

MOS Rectifier Application for ITO Package

Application Field:

1. Adaptor (60W ~ 90W) for Note book
2. Power Port for TV

Advantage :

1. Extremely low Vf ; Low power dissipation
2. Isolation Package,

Suggested PN List for NB Adaptor:

SBF10L100CT

SBF20L100CT

Suggested PN List for TV Power:

SBF10L200CT

SBF20L200CT



Part Number List for Adaptor Application

PDC Part Number	IO(A)	VR(V)	VF(Max)			IR(Max)		IFSM(A)	Package	Competirot "Diodes" PN
			Typ(mV)	Max(mV)	IFM(A)	Max(mA)	VR(V)			
SBF10L100CT	10	100	560	720 600	5A @ 25 5A @125	0.1 100	100V @ 25 100V @125	150	ITO-220AB	SBR10A100CTFP
SBF10L200CT	10	200	680	860 760	5A @ 25 5A @125	0.1 10	200V @ 25 200V @125	150	ITO-220AB	SBR10A200CTFP
SBF20L100CT	20	100	710 600	750 640	10A @ 25 10A @125	0.1 10	100V @ 25 100V @125	250	ITO-220AB	SBR20A100CTFP
SBF20L200CT	20	200	660	860 720	10A @ 25 10A @125	0.1 10	200V @ 25 200V @125	180	ITO-220AB	SBR20A200CTFP

PDC *SUPPORTING YOU FORWARD*

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