




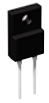


# SiC Power Devices

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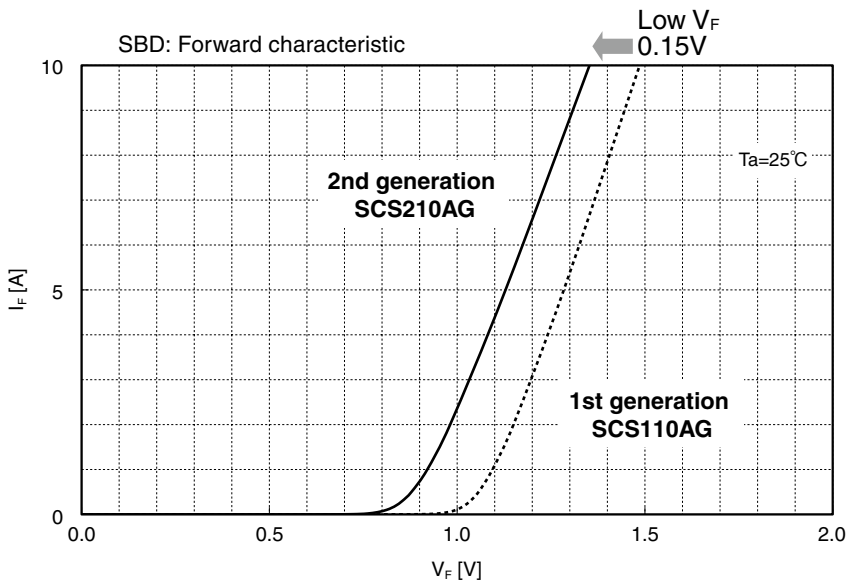
# Schottky Barrier Diodes

## Quick Reference

V <sub>RM</sub> (V)	I <sub>F</sub> (A)	Leaded Type			
		 TO-220AC (2pin)	 TO-220FM (2pin)	 TO-247 (3pin)	 LPTL (4pin)
600	6	SCS106AG	SCS106AM		
	8	SCS108AG	SCS108AM		
	10	SCS110AG	SCS110AM		
	12	SCS112AG	SCS112AM		
	20	SCS120AG		SCS120AE2	
	40			SCS140AE2	
650	6	SCS206AG*	SCS206AM*		<b>New</b> SCS206AJ*
	8	SCS208AG*	SCS208AM*		<b>New</b> SCS208AJ*
	10	SCS210AG*	SCS210AM*		<b>New</b> SCS210AJ*
	12	SCS212AG*	SCS212AM*		<b>New</b> SCS212AJ*
	15	<b>New</b> SCS215AG*	<b>New</b> SCS215AM*		<b>New</b> SCS215AJ*
	20	SCS220AG*	<b>New</b> SCS220AM*	SCS220AE2*	<b>New</b> SCS220AJ*
	30			<b>New</b> SCS230AE2*	
	40			SCS240AE2*	
1,200	5	SCS205KG* SCS105KG			
	10	SCS210KG* SCS110KG		SCS210KE2* SCS110KE2	
	15	SCS215KG*			
	20	SCS220KG* SCS120KG		SCS220KE2* SCS120KE2	
	30			<b>New</b> SCS230KE2*	
	40			<b>New</b> SCS240KE2*	

\*: 2nd Generation

## 2<sup>nd</sup> Generation low-V<sub>F</sub> SiC-SBD



## Product Lineup

### • 2<sup>nd</sup> Generation (Low Vf)

Part No.	Automotive Grade Available*1	Absolute Maximum Ratings (Ta=25°C)				Electrical Characteristics (Ta=25°C)				Package	Equivalent Circuit Diagram
		V <sub>RM</sub> (V)	V <sub>R</sub> (V)	I <sub>F</sub> (A)	I <sub>FSM</sub> (A) 60Hz.1	V <sub>F</sub> (V) Typ.	I <sub>F</sub> (A)	I <sub>R</sub> (μA) Max.	V <sub>R</sub> (V)		
<b>New</b> SCS206AJ	—	650	650	6	24	1.35	6	120	600	LPTL (4pin)	
<b>New</b> SCS208AJ	—	650	650	8	31	1.35	8	160	600		
<b>New</b> SCS210AJ	—	650	650	10	40	1.35	10	200	600		
<b>New</b> SCS212AJ	—	650	650	12	45	1.35	12	240	600		
<b>New</b> SCS215AJ	—	650	650	15	55	1.35	15	300	600		
<b>New</b> SCS220AJ	—	650	650	20	71	1.35	20	400	600		
SCS206AG	Yes	650	650	6	24	1.35	6	120	600	TO-220AC (2pin)	
SCS208AG	Yes	650	650	8	31	1.35	8	160	600		
SCS210AG	Yes	650	650	10	40	1.35	10	200	600		
SCS212AG	Yes	650	650	12	45	1.35	12	240	600		
<b>New</b> SCS215AG	Yes	650	650	15	55	1.35	15	300	600		
SCS220AG	Yes	650	650	20	71	1.35	20	400	600		
SCS206AM	—	650	650	6	24	1.35	6	120	600	TO-220FM (2pin)	
SCS208AM	—	650	650	8	31	1.35	8	160	600		
SCS210AM	—	650	650	10	40	1.35	10	200	600		
SCS212AM	—	650	650	12	45	1.35	12	240	600		
<b>New</b> SCS215AM	—	650	650	15	55	1.35	15	300	600		
<b>New</b> SCS220AM	—	650	650	20	71	1.35	20	400	600		
SCS220AE2	Yes	650	650	10/20*2	40/80*2	1.35	10	200	600	TO-247 (3pin)	
<b>New</b> SCS230AE2	—	650	650	15/30*2	55/110*2	1.35	15	300	600		
SCS240AE2	—	650	650	20/40*2	71/140*2	1.35	20	400	600		
SCS205KG	Yes	1,200	1,200	5	23	1.4	5	100	1,200	TO-220AC (2pin)	
SCS210KG	Yes	1,200	1,200	10	45	1.4	10	200	1,200		
SCS215KG	—	1,200	1,200	15	65	1.4	15	300	1,200		
SCS220KG	—	1,200	1,200	20	82	1.4	20	400	1,200		
SCS210KE2	—	1,200	1,200	5/10*2	23/46*2	1.4	5	100	1,200	TO-247 (3pin)	
SCS220KE2	—	1,200	1,200	10/20*2	44/88*2	1.4	10	200	1,200		
<b>New</b> SCS230KE2	—	1,200	1,200	15/30*2	65/130*2	1.4	15	300	1,200		
<b>New</b> SCS240KE2	—	1,200	1,200	20/40*2	84/160*2	1.4	20	400	1,200		

\*1 As of June, 2013.

\*2 (Per Leg / Device)

### • 1<sup>st</sup> Generation

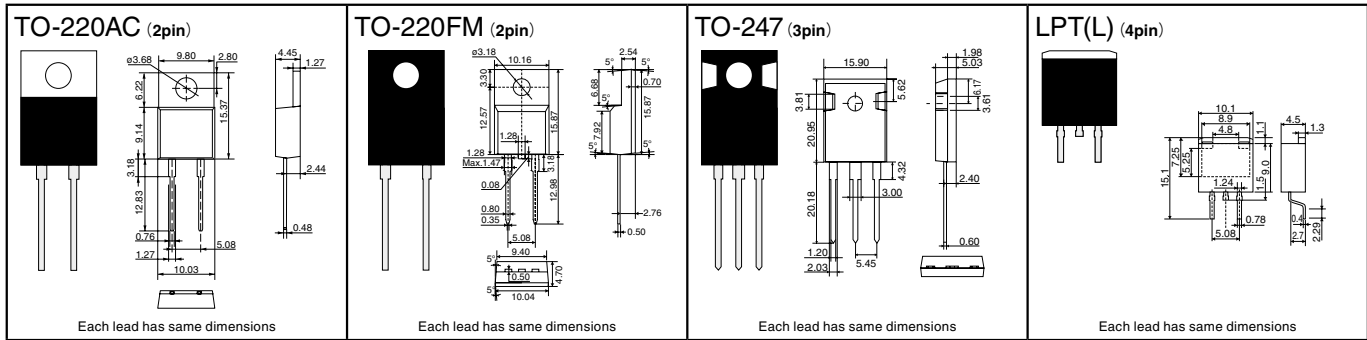
Part No.	Automotive Grade Available	Absolute Maximum Ratings (Ta=25°C)				Electrical Characteristics (Ta=25°C)				Package	Equivalent Circuit Diagram
		V <sub>RM</sub> (V)	V <sub>R</sub> (V)	I <sub>F</sub> (A)	I <sub>FSM</sub> (A) 60Hz.1	V <sub>F</sub> (V) Typ.	I <sub>F</sub> (A)	I <sub>R</sub> (μA) Max.	V <sub>R</sub> (V)		
SCS106AG	—	600	600	6	21	1.5	6	120	600	TO-220AC (2pin)	
SCS108AG	—	600	600	8	29	1.5	8	160	600		
SCS110AG	—	600	600	10	40	1.5	10	200	600		
SCS112AG	—	600	600	12	41	1.5	12	240	600		
SCS120AG	—	600	600	20	76	1.5	20	400	600		
SCS106AM	—	600	600	6	21	1.5	6	120	600		
SCS108AM	—	600	600	8	29	1.5	8	160	600		
SCS110AM	—	600	600	10	40	1.5	10	200	600		
SCS112AM	—	600	600	12	41	1.5	12	240	600		
SCS120AE2	—	600	600	10/20*	40/80*	1.5	10	200	600	TO-247 (3pin)	
SCS140AE2	—	600	600	20/40*	76/152*	1.5	20	400	600		
SCS105KG	—	1,200	1,200	5	21	1.5	5	100	1,200	TO-220AC (2pin)	
SCS110KG	—	1,200	1,200	10	45	1.5	10	200	1,200		
SCS120KG	—	1,200	1,200	20	84	1.5	20	400	1,200		
SCS110KE2	—	1,200	1,200	5/10*	20/40*	1.5	5	100	1,200	TO-247 (3pin)	
SCS120KE2	—	1,200	1,200	10/20*	40/80*	1.5	10	200	1,200		

\* (Per Leg / Device)

# Schottky Barrier Diodes

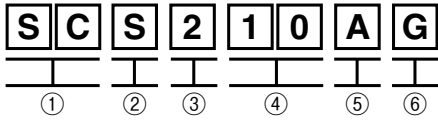
## ■ Dimensions (Unit : mm)

### • Leded Type



## ■ Part No. Explanation

### • Schottky Barrier Diode Part No. Explanation



- ① SiC
- ② SBD
- ③ Generation
- ④ Current [A]  
 Example 05 → 5A  
 10 → 10A

- ⑤ Voltage  
 Example A → 600V/650V  
 K → 1200V
- ⑥ Package  
 Example E → TO-247(3pin)  
 G → TO-220AC (2pin)  
 M → TO-220FM (2pin)  
 J → LPT(L) (4pin)

## SiC-MOSFET

### Quick Reference

V <sub>DSS</sub> (V)	R <sub>DS(ON)</sub> (mΩ)	Leaded Type		SiC SBD
		TO-220AB (3pin)	TO-247 (3pin)	
400	120	<b>New</b> SCTMU001F		-
650	120	<b>New</b> SCT2120AF		-
1,200	80		SCH2080KE	Co-packed
	160		SCT2080KE	-
	280		<b>New</b> SCT2160KE	-
	450		<b>New</b> SCT2280KE	-
			<b>New</b> SCT2450KE	-

### Product Lineup

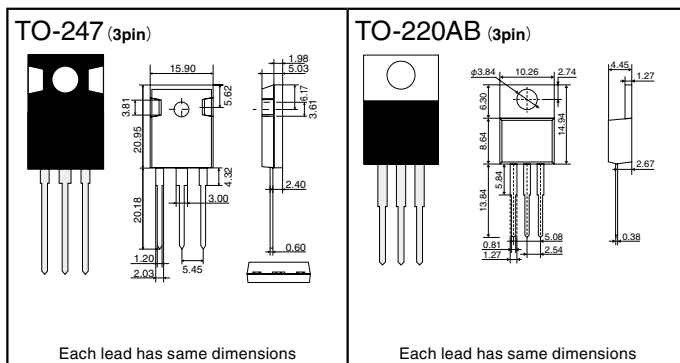
#### •SWITCHING SERIES

Part No.	Polarity (ch)	V <sub>DSS</sub> (V)	I <sub>D</sub> (A)	P <sub>D</sub> (W) (T <sub>c</sub> = 25°C)	R <sub>DS(on)</sub> Typ. (mΩ)	Q <sub>g</sub> Typ. (nC)		Package
					V <sub>GS</sub> = 18V	V <sub>GS</sub> = 18V	Drive Voltage (V)	
<b>New</b> SCT2120AF [No avalanche guarantee]	N	650	29	165	120	61	18	TO-220AB
SCH2080KE [No avalanche guarantee]	N	1,200	35	179	80	106	18	TO-247
SCT2080KE [No avalanche guarantee]	N	1,200	35	179	80	106	18	
<b>New</b> SCT2160KE [No avalanche guarantee]	N	1,200	22	165	160	62	18	
<b>New</b> SCT2280KE [No avalanche guarantee]	N	1,200	14	108	280	36	18	
<b>New</b> SCT2450KE [No avalanche guarantee]	N	1,200	10	85	450	27	18	

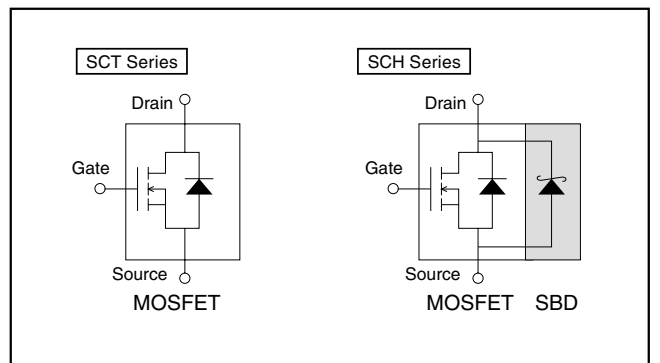
#### •MUSIC SERIES

Part No.	Polarity (ch)	V <sub>DSS</sub> (V)	I <sub>D</sub> (A)	P <sub>D</sub> (W) (T <sub>c</sub> = 25°C)	R <sub>DS(on)</sub> Typ. (mΩ)	Q <sub>g</sub> Typ. (nC)		Package
					V <sub>GS</sub> = 18V	V <sub>GS</sub> = 18V	Drive Voltage (V)	
<b>New</b> SCTMU001F [No avalanche guarantee]	N	400	20	132	120	59	18	TO-220AB

### Dimensions (Unit : mm)

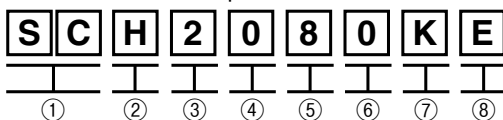


### Internal circuit



### Part No. Explanation


#### •MOSFET Part No. Explanation



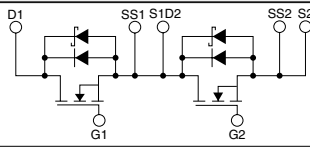
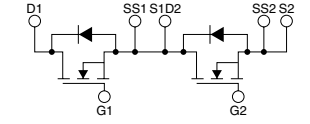
- ① SiC
- ② H → MOSFET+SBD  
T → MOSFET
- ③ Generation
- ④
- ⑤ } ON-resistance [mΩ]
- ⑥
- ⑦ Voltage A → 650V K → 1200V
- ⑧ Package E → TO-247  
F → TO-220AB (3pin)

# Full SiC Power Modules

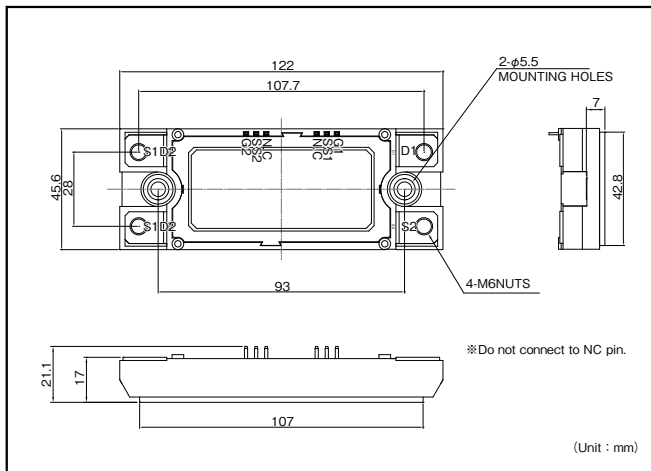
## Quick Reference

V <sub>DSS</sub> (V)	R <sub>DS(ON)</sub> (mΩ)	Case Type
		
1,200	22	<b>BSM120D12P2C005</b>
	12.8	<b>New</b> BSM180D12P2C101

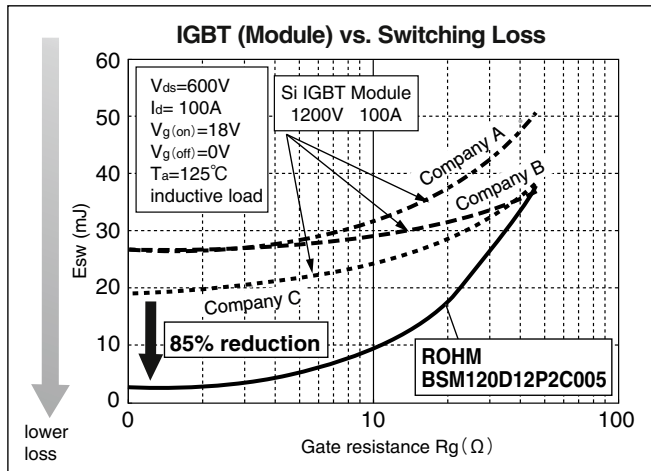
## Product Lineup

Part No.	Absolute Maximum Ratings (Ta=25°C)						Internal circuit
	V <sub>DS</sub> (V)	V <sub>GS</sub> (V)	I <sub>D</sub> (A) (Tc=60°C)	T <sub>J</sub> (°C)	T <sub>stg</sub> (°C)	Visol (V) AC 1min.	
<b>BSM120D12P2C005</b>	1,200	-6 to +22	120	-40 to +150	-40 to +125	2,500	
<b>New</b> BSM180D12P2C101	1,200	-6 to +22	180	-40 to +150	-40 to +125	2,500	

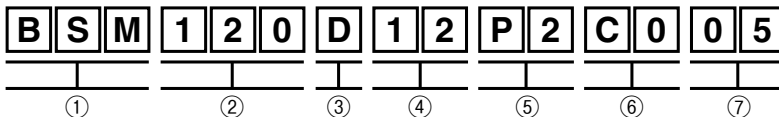
## Dimensions



## Feature



## Part No. Explanation



- ① SiC Power Module
- ② Rated Current
- ③ 2 in 1
- ④ Breakdown Voltage  
Example 12 → 1200V
- ⑤ Device Type
- ⑥ Case Type
- ⑦ Additional Number

## Packaging type

Package	Code	Packaging style	Basic ordering unit (pcs)
TO-220AC/AB	C	Tube	50
TO-220FM	C	Tube	50
TO-247	C	Tube	30
LPT(L)	TLL	Embossed Tape	1000

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