



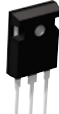
SiC Power Devices

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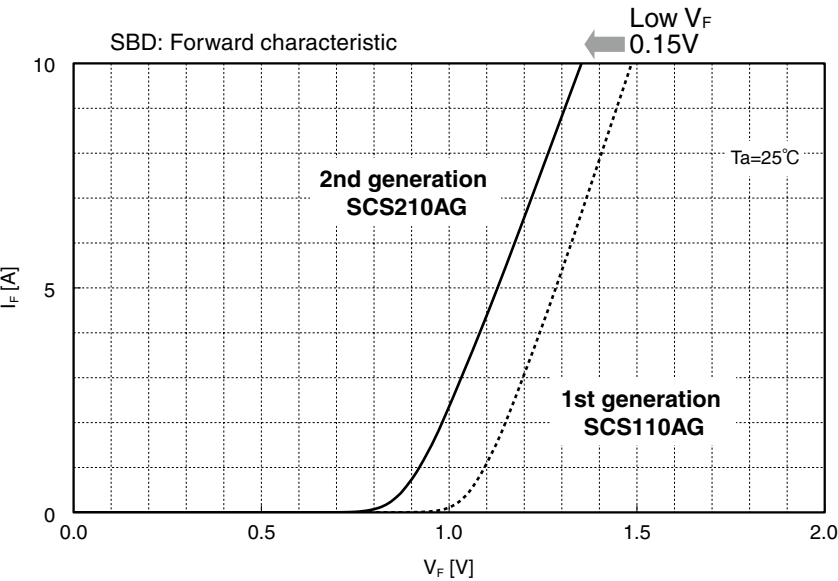
Schottky Barrier Diodes

Quick Reference

V _{RM} (V)	I _F (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*		New SCS206AJ*
	8	SCS208AG*	SCS208AM*		New SCS208AJ*
	10	SCS210AG*	SCS210AM*		New SCS210AJ*
	12	SCS212AG*	SCS212AM*		New SCS212AJ*
	15	New SCS215AG*	New SCS215AM*		New SCS215AJ*
	20	SCS220AG*	New SCS220AM*	SCS220AE2*	New SCS220AJ*
	30			New SCS230AE2*	
	40			SCS240AE2*	
1,200	5	SCS205KG* SCS105KG			
	10	SCS210KG* SCS110KG		SCS210KE2* SCS110KE2	
	15	SCS215KG*			
	20	SCS220KG* SCS120KG		SCS220KE2* SCS120KE2	
	30			New SCS230KE2*	
	40			New SCS240KE2*	

*: 2nd Generation

2nd Generation low-V_F SiC-SBD



Product Lineup

•2nd Generation (Low V_F)

Part No.	Automotive Grade Available*	Absolute Maximum Ratings (Ta=25°C)				Electrical Characteristics (Ta=25°C)				Package	Equivalent Circuit Diagram
		V_{RM} (V)	V_R (V)	I_F (A)	I_{FSM} (A) 60Hz.1	V_F (V) Typ.	I_F (A)	I_R (μA) Max.	V_R (V)		
New SCS206AJ	—	650	650	6	24	1.35	6	120	600	LPTL [4pin]	
New SCS208AJ	—	650	650	8	31	1.35	8	160	600		
New SCS210AJ	—	650	650	10	40	1.35	10	200	600		
New SCS212AJ	—	650	650	12	45	1.35	12	240	600		
New SCS215AJ	—	650	650	15	55	1.35	15	300	600		
New SCS220AJ	—	650	650	20	71	1.35	20	400	600	TO-220AC [2pin]	
SCS206AG	Yes	650	650	6	24	1.35	6	120	600		
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		
New SCS215AG	Yes	650	650	15	55	1.35	15	300	600	TO-220FM [2pin]	
SCS220AG	Yes	650	650	20	71	1.35	20	400	600		
SCS206AM	—	650	650	6	24	1.35	6	120	600		
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	TO-247 [3pin]	
New SCS215AM	—	650	650	15	55	1.35	15	300	600		
New 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		
New 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	TO-220AC [2pin]	
SCS205KG	Yes	1,200	1,200	5	23	1.4	5	100	1,200		
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		
New SCS230KE2	—	1,200	1,200	15/30*2	65/130*2	1.4	15	300	1,200		
New 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)

•1st Generation

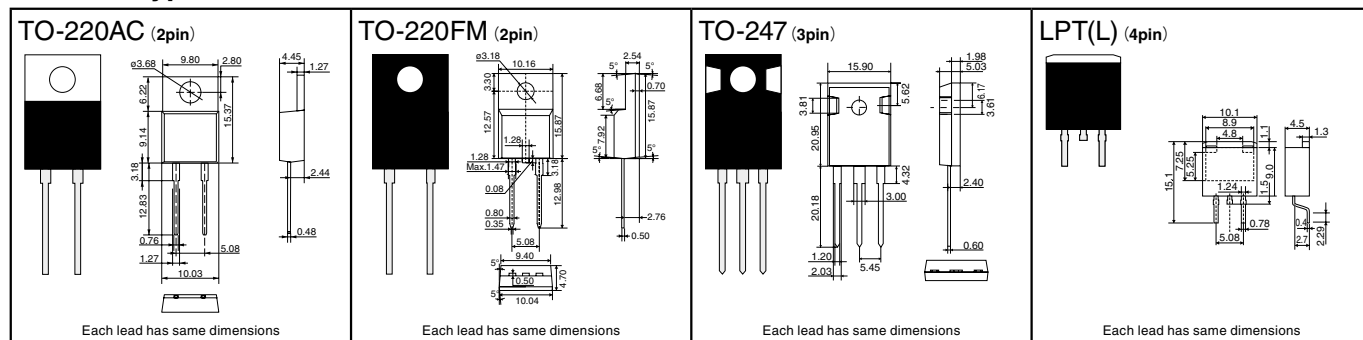
Part No.	Automotive Grade Available	Absolute Maximum Ratings (Ta=25°C)				Electrical Characteristics (Ta=25°C)				Package	Equivalent Circuit Diagram
		V_{RM} (V)	V_R (V)	I_F (A)	I_{FSM} (A) 60Hz.1	V_F (V) Typ.	I_F (A)	I_R (μA) Max.	V_R (V)		
SCS106AG	—	600	600	6	21	1.5	6	120	600	TO-220AC [2pin]	
SCS108AG	—	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	TO-220FM [2pin]	
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		
SCS140AE2	—	600	600	20/40*	76/152*	1.5	20	400	600	TO-247 [3pin]	
SCS105KG	—	1,200	1,200	5	21	1.5	5	100	1,200		
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		
SCS120KE2	—	1,200	1,200	10/20*	40/80*	1.5	10	200	1,200	TO-247 [3pin]	

* (Per Leg / Device)

Schottky Barrier Diodes

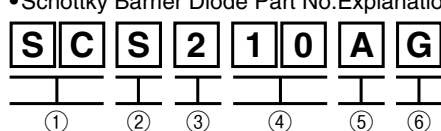
■ Dimensions (Unit : mm)

•Leaded 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 _{DSS} (V)	R _{DS(ON)} (mΩ)	Leaded Type		SiC SBD
		 TO-220AB [3pin]	 TO-247 [3pin]	
400	120	New SCTMU001F		—
650	120	New SCT2120AF		—
1,200	80		SCH2080KE	Co-packed
			SCT2080KE	—
	160		New SCT2160KE	—
	280		New SCT2280KE	—
	450		New SCT2450KE	—

Product Lineup

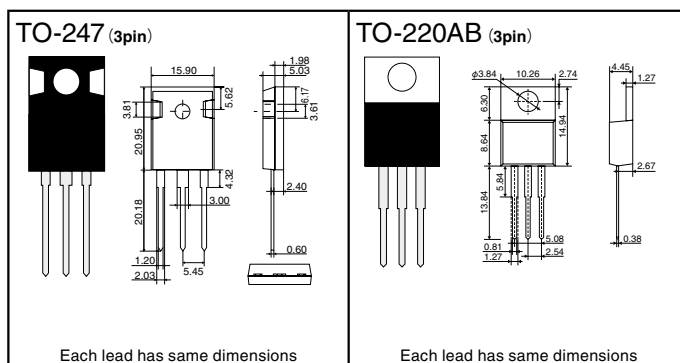
•SWITCHING SERIES

Part No.	Polarity (ch)	V _{DSS} (V)	I _D (A)	P _D (W) (T _c = 25°C)	R _{DS (on)} Typ. (mΩ)	Q _g Typ. (nC)		Package
					V _{GS} = 18V	V _{GS} = 18V	Drive Voltage (V)	
New 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	
New SCT2160KE [No avalanche guarantee]	N	1,200	22	165	160	62	18	
New SCT2280KE [No avalanche guarantee]	N	1,200	14	108	280	36	18	
New SCT2450KE [No avalanche guarantee]	N	1,200	10	85	450	27	18	

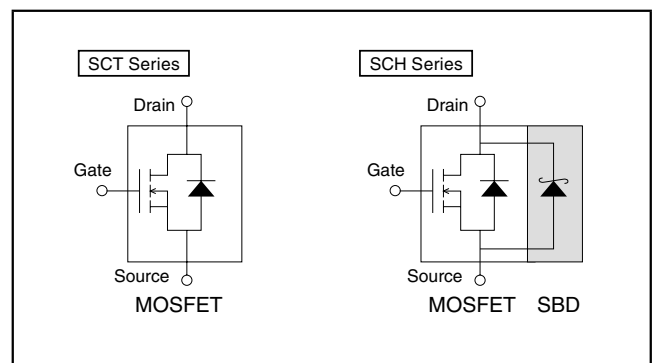
•MUSIC SERIES

Part No.	Polarity (ch)	V _{DSS} (V)	I _D (A)	P _D (W) (T _c = 25°C)	R _{DS (on)} Typ. (mΩ)	Q _g Typ. (nC)		Package
					V _{GS} = 18V	V _{GS} = 18V	Drive Voltage (V)	
New SCTMU001F [No avalanche guarantee]	N	400	20	132	120	59	18	TO-220AB

Dimensions (Unit : mm)

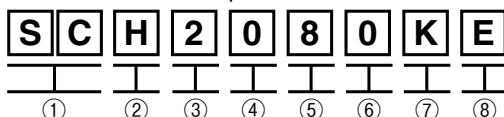


Internal circuit



Part No. Explanation

•MOSFET Part No. Explanation



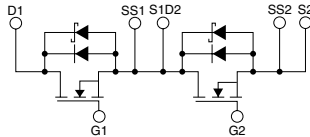
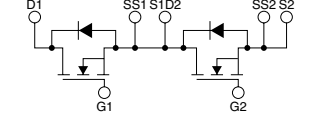
- ① SiC
- ② H → MOSFET+SBD
T → MOSFET
- ③ Generation
- ④ } ON-resistance [mΩ]
- ⑤ }
- ⑥ }
- ⑦ Voltage A → 650V K → 1200V
- ⑧ Package E → TO-247
F → TO-220AB (3pin)

Full SiC Power Modules

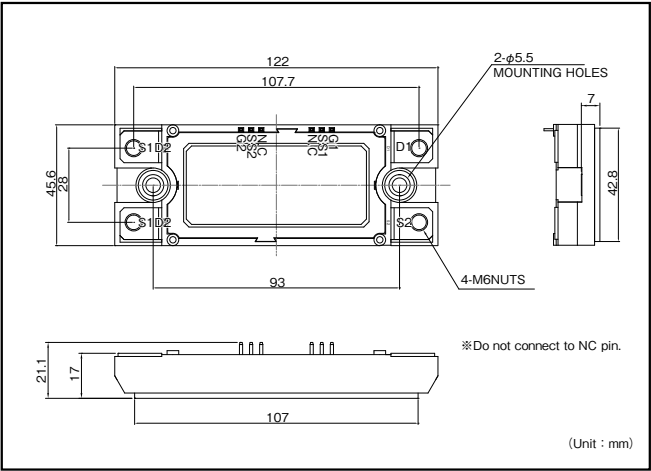
Quick Reference

V _{DSS} (V)	R _{DS(ON)} (mΩ)	Case Type
		
1,200	22	BSM120D12P2C005
	12.8	New BSM180D12P2C101

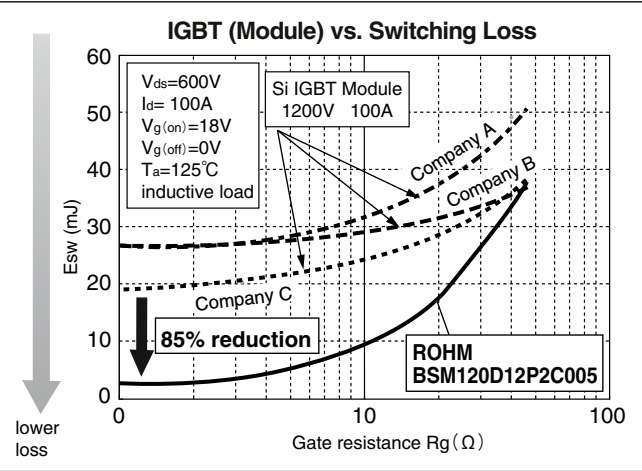
Product Lineup

Part No.	Absolute Maximum Ratings (Ta=25°C)						Internal circuit
	V _{DS} (V)	V _{GS} (V)	I _D (A) (Tc=60°C)	T _j (°C)	T _{stg} (°C)	Visol (V) AC 1min.	
BSM120D12P2C005	1,200	-6 to +22	120	-40 to +150	-40 to +125	2,500	
New BSM180D12P2C101	1,200	-6 to +22	180	-40 to +150	-40 to +125	2,500	

Dimensions



Feature



Part No. Explanation

B	S	M	1	2	0	D	1	2	P	2	C	0	0	5
①	②	③	④	⑤	⑥	⑦								

- 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

Notes

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