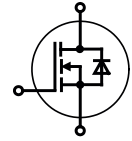


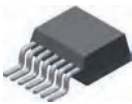



Silicon Carbide Power MOSFETs and Diodes

Littelfuse SiC MOSFETs offer a rewarding alternative to traditional Si based power transistor devices. The MOSFET device structure enables lower per-cycle switching losses and improved light load efficiency when compared to similarly rated IGBTs. Inherent material properties allow the SiC MOSFET to outclass its Si MOSFET counterparts in terms of blocking voltage, specific on resistance, and junction capacitances.

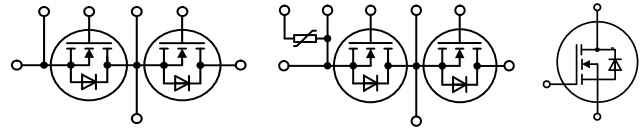
Littelfuse SiC Schottky Diodes have negligible reverse recovery current, high surge capability, and a maximum operating junction temperature of 175°C. These diodes are ideal for applications where improvements in efficiency, reliability, and thermal management are desired.



SiC MOSFETs

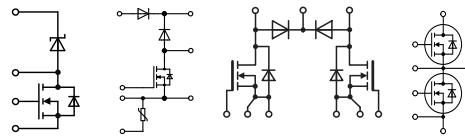
Part Type	V _{DSS}	I _D T _C = 25°C	I _D T _C = 100°C	R _{DS(on)} T _J = 25°C	C _{iss} typ	Q _g typ	R _{thJC}	Fig. No.	Package style Outline drawings on pages O-36...O-63
◇ Under Dev. 2019 Release	V	A	A	mΩ (typ)	pF	nC	K/W		
◇ LSIC1MO120E0025	1200	100	70	25	4465	250	0.30	L014a	L012b TO-263 (7) 
◇ LSIC1MO120E0040		65	50	40	2825	160	0.42		
LSIC1MO120E0080		39	25	80	1825	95	0.70		
LSIC1MO120E0120		27	18	120	1125	80	0.90		
LSIC1MO120E0160		22	14	160	870	57	1.00		
◇ LSIC1MO120G0025		100	70	25	4465	250	0.30	L014d	L014d TO-247-4L 
◇ LSIC1MO120G0040		65	50	40	2825	160	0.42		
◇ LSIC1MO120G0080		39	25	80	1825	95	0.70		
◇ LSIC1MO120G0120		27	18	120	1125	80	0.90		
◇ LSIC1MO120G0160		22	14	160	870	57	1.00		
◇ LSIC1MO120T0080	1700	39	25	80	1825	95	0.70	L012b	L014a TO-247 AD 
◇ LSIC1MO120T0120		27	18	120	1125	80	0.90		
◇ LSIC1MO120T0160		22	14	160	870	57	1.00		
LSIC1MO170E1000	1700	5	3.5	750	200	15.7	2.30	L014a	L019a TO-268AA (HV) 
◇ LSIC1MO170T0750		5	3.5	750	200	15.7	2.30	L012b	
◇ LSIC1MO170H0750		5	3.5	750	200	15.7	2.30	L019a	

Silicon Carbide Power MOSFETs



Part Type	V _{DSS}	I _{D25} T _C = 25°C	I _{D80} T _C = 80°C	R _{DS(on)} T _C = 25°C	C _{iss} typ	Q _g typ	R _{thjC}	Fig. No.	Package style Outline drawings on pages O-36...O-59
◇ under development	V	A	A	mΩ (typ)	pF	nC	K/W		
➤ New									
➤ IXFN 130N90SK ¹⁾	900	136	109	10	4500	68	0.42	X027a	X016c ISO247™
➤ IXFN 27N120SK ¹⁾	1200	27	21.5	80	950	62	1.10	X019a	
IXFN 50N120SiC		47	35	40	1900	100	0.55		
IXFN 50N120SK ¹⁾		48	38	40	1895	115	0.60		
◇ MCB 40I1200TZ	1700	60	45	40	1895	115	0.40	X019a	
IXFN 70N120SK ¹⁾		68	55	25	2790	160	0.45	X027a	
MCB 60I1200TZ		90	70	25	2790	160	0.27	X019a	
◇ IXFN 140N120SK ¹⁾		170	135	14	5580	320	0.14	X027a	
◇ IXFN 45N170SK ¹⁾		47	35	45	3670	188	0.40	X027a	
◇ MCB 45I1700TZ	58	45	45	3670	188	0.25	X019a		
➤ IXFN 90N170SK ¹⁾	90	67	23	7340	376	0.22	X027a		
Phase Leg									
➤ MCB 20P1200LB	1200	22	17.5	80	950	62	1.60	X030a	X019a TO-268AAHV
◇ MCL 20P1200LB		31.5	23.5	80	1825	95	0.90		
➤ MCB 30P1200LB		37	29.5	40	1895	115	1.00		
➤ MCB 40P1200LB		58	43	25	2790	160	0.60		
◇ MCB 60P1200TLB *		77	62	25	2790	161	0.35		
◇ MCB 35P1700TLB *	1700	47	35	45	3670	188	0.40		

¹⁾ Kelvin source gate connection; * NTC added



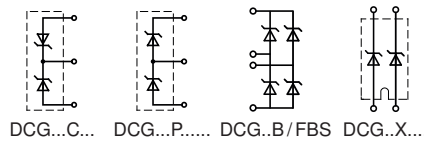
Boost Circuits

Type	Circuit and Technology	V _{DSS} max	I _{D80} T _C = 80°C	R _{DS(on)} typ	I _{F80} Boost Diode	Fig. No.
◇ under development		V	A	Ω	A	
➤ New						
➤ MXB 12R650DCGFC	X2 Class Boost + SiC Diode	650	12	0.15 (max)	11,5	X024a
➤ MKH 17RP650DCGLB	Dual Boost Superjunction ¹⁾ + SiC		2 x 16	0.11 (max)	2 x 16	X030a
◇ MCL 25R1200LB	Boost SiC Mosfet + SiC Diode	1200	25.5	0.08	14	X024a ISOPLUS i4-PAC™
◇ MCL 25RP1200LB	Dual Boost SiC Mosfet + SiC Diode		2 x 25.5	0.08	2 x 14	
◇ MCB 30RL1200TLB	Boost + Bypass + NTC SiC Mosfet + SiC Diode		29.5	0.04	34	
◇ MCB 45R1200LB	Boost iC Mosfet + SiC Diode		44	0.04	28	
◇ MCB 35R1700LB	Boost SiC Mosfet + SiC Diode	1700	35	0.045	22	

¹⁾ Powered by Infineon CoolMOS™ superjunction bare die C6

Silicon Carbide Schottky Diodes

No reverse recovery



Type	V _{RRM}	I _{F80} per diode	I _{FAV} d = 0.5	@ T _C	V _F typ., T _{VJ} = 175°C	@ I _F	R _{thjC}	Fig. No.		
◇ Under development	V	A	A	°C	V	A	K/W			
➤ New										
Dual										
➤ DCG 160X650NA	650	105	2x 80	80	1.35	50	0.47	X027a	X027a SOT-227B miniBLOC 	
◇ DCG 40X1200LB	1200	19.5	2x 14.5	80	2.20	20	1.90	X030a		
DCG 45X1200NA		30	2x 22	80	2.20	20	1.10	X027a		
DCG 85X1200NA		59	2x 43	80	2.20	40	0.57			
DCG 100X1200NA		66	2x 49	80	2.25	50	0.51			
DCG 130X1200NA		88	2x 64	80	2.30	60	0.39			
Common Cathode										
➤ DCG 20C1200HR	1200	13	2x 10	80	2.20	10	3.0	X016c	X030a SMPD-B 	
➤ DCG 35C1200HR		23	2x 17	80	2.20	20	1.8			
Phase Leg										
➤ DCG 10P1200HR	2x 1200	13	10	80	2.20	10	3.0	X016c		
➤ DCG 17P1200HR		23	17	80	2.20	20	1.8			
Full Bridge										
➤ DCG 20B650LB	650	16	10.5	80	2.0	10	2.1	X030a		
➤ FBS 10-12SC	1200	6.0	4.5	80	2.6	5	7.0	X024a		
◇ DCG 20B1200LB		12.5	9.2	80	2.0	20	3.3	X030a		