

SILICON CARBIDE SCHOTTKY DIODE

REVERSE VOLTAGE – 1200 Volts
FORWARD CURRENT – 2 Amperes

FEATURES

- Positive temperature coefficient for safe operation and easy of paralleling
- 175°C maximum operating junction temperature
- Essentially no reverse or forward recovery
- Extremely fast switching not dependent on temperature
- Qualified according to AEC-Q101 Rev_D

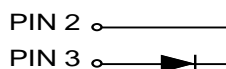
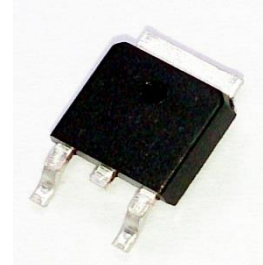
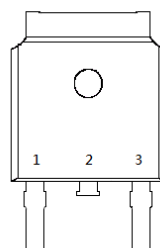
APPLICATION

- Switch mode Power Supplies
- Power Factor correction

MECHANICAL DATA

- Case: TO-252 molded plastic
- Case Material: “Green” molding compound, UL flammability classification 94V-0, “Halogen-free”.
- Moisture Sensitivity: Level 1 per J-STD-020
- Lead free finish, RoHS compliant
- Weight: 0.989 grams (Approximate)
- Marking code: LSC02120DW

DPAK



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	1200	V
Maximum DC blocking voltage	V_{DC}	1200	V
Maximum Average rectified output current	$I_{(AV)}$	2	A
Peak forward surge current 10ms single half sine-wave superimposed on rated load.	I_{FSM}	24	A
Operating junction and Storage Temperature range	T_J, T_{STG}	-55 ~ +175	°C

STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage (Note1)	$I_F=2A$ $T_J=25^\circ C$ $T_J=150^\circ C$	V_F	-- 1.9	1.6 2.3	V
Leakage current	$V_R=1200V$ $T_J=25^\circ C$ $T_J=150^\circ C$	I_R	-- 94	128 --	uA

DYNAMIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	TYP	UNIT
Total Capacitive Charge	$V_R=400V, di/dt= 200A/uS$ $I_F=2A$	Q_C	15	nC
Typical junction capacitance (Note 2)		C_J	105	pF

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Note 3,4)	R_{thJc}	9	°C/W
	R_{thJl}	4	

Note :

- (1) 300us pulse width, 2% duty cycle.
- (2) Measured at 1.0MHz and applied voltage of 1.0VDC.
- (3) Thermal resistance test performed in accordance with JESD-51.
- (4) The unit mounted on copper PCBA (50 mm x 50 mm)

REV.-7, Jan-2021, KTGB15

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RATING AND CHARACTERISTIC CURVES
LSC02120DW



FIG.1 FORWARD CURRENT DERATING CURVE

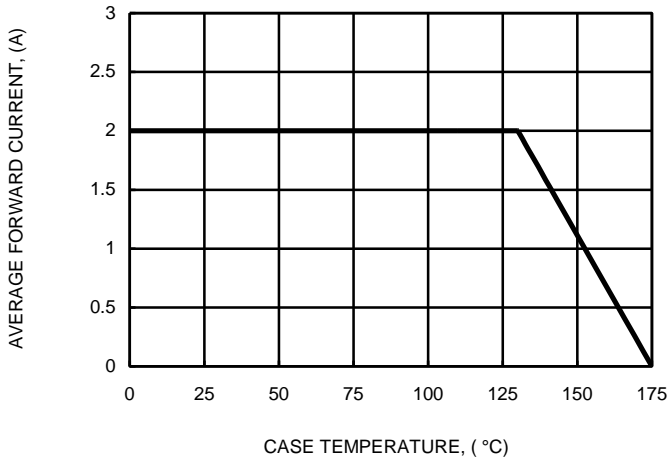


FIG.2 NON-REPETITIVE PEAK SURGE FORWARD CURRENT

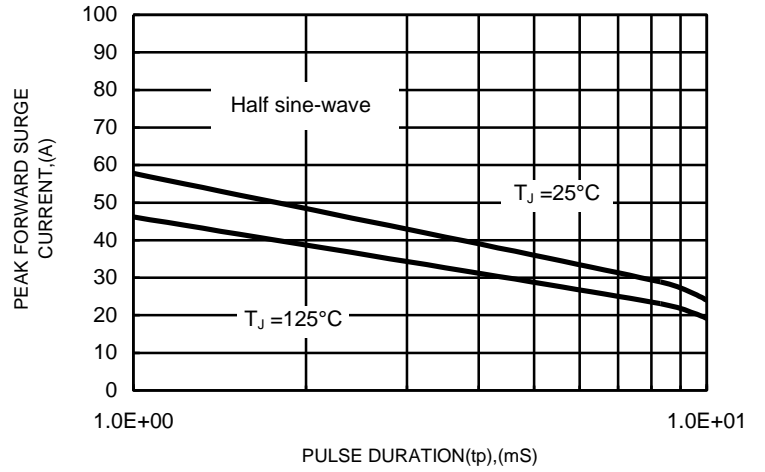


FIG.3 TYPICAL FORWARD CHARACTERISTICS

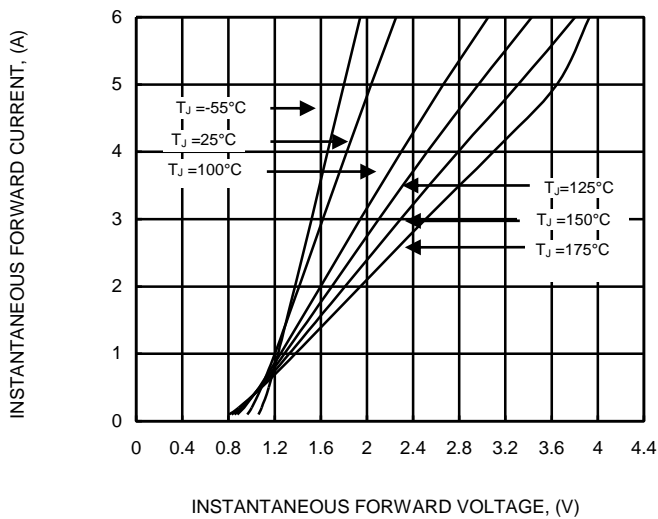


FIG.4 TYPICAL JUNCTION CAPACITANCE

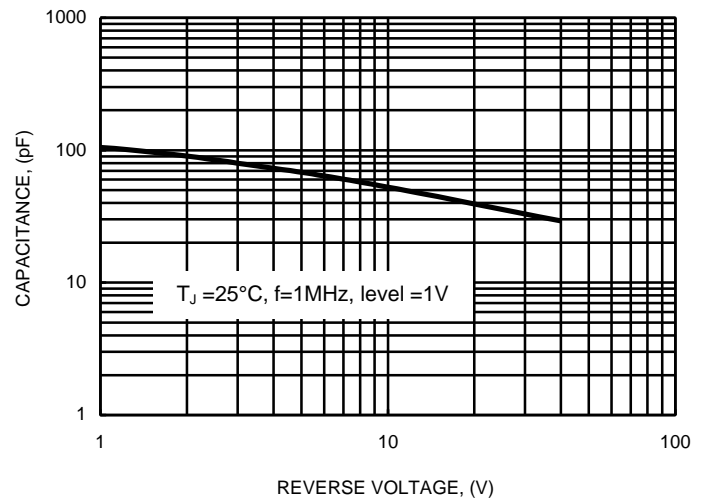


FIG.5 TYPICAL REVERSE CHARACTERISTICS

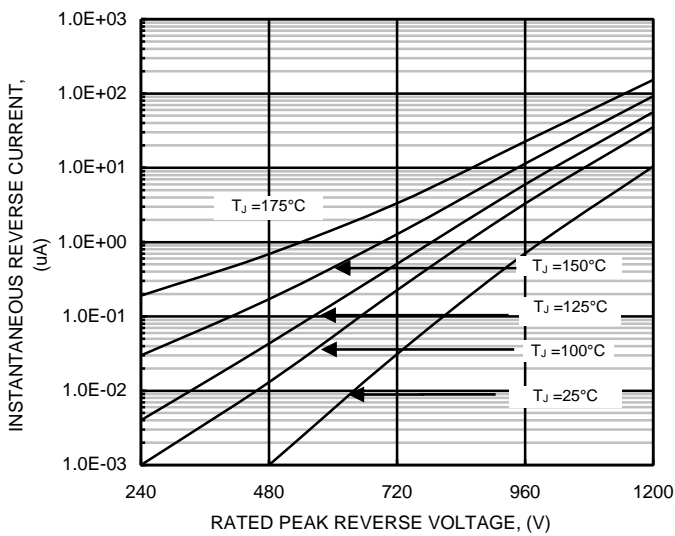
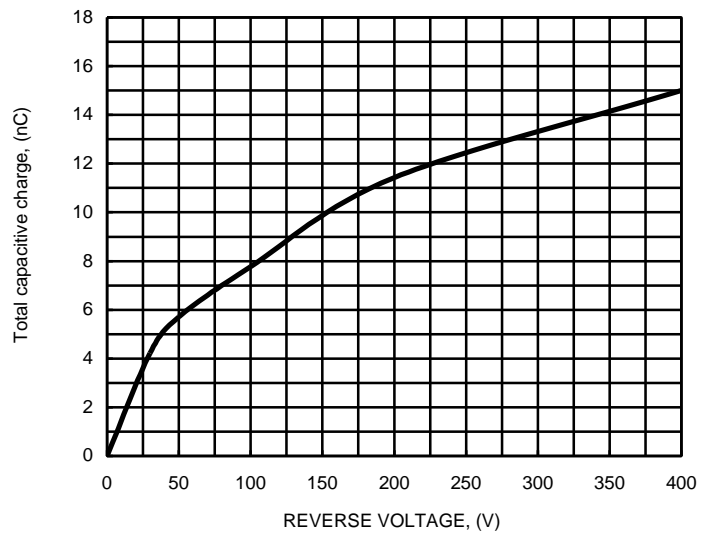


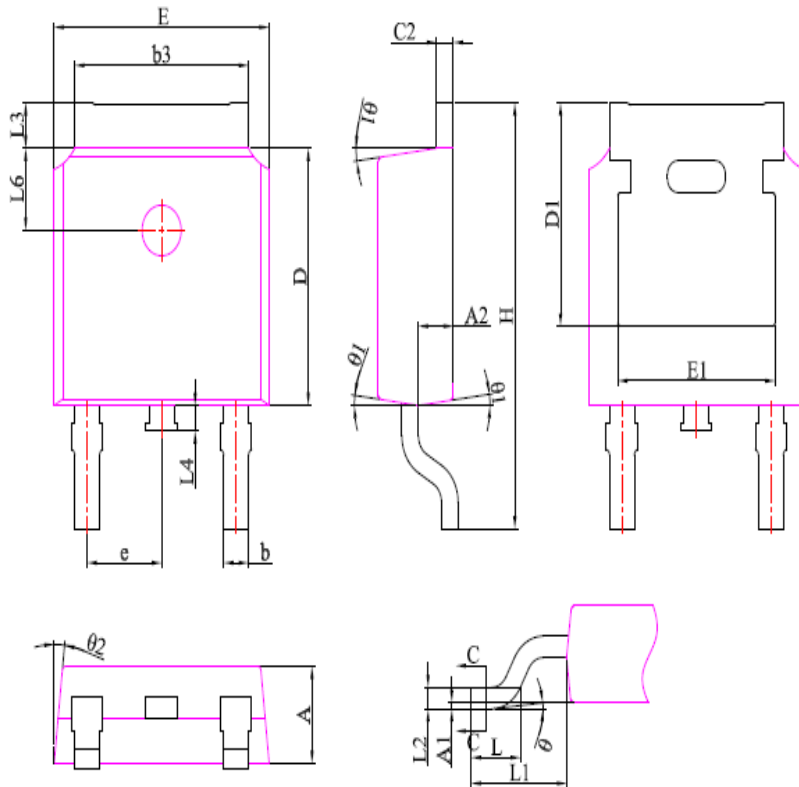
FIG.6 TYPICAL CAPACITIVE CHARGES



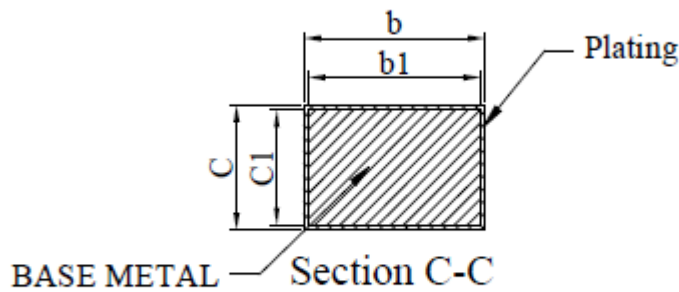
MECHANICAL AND MARKING INFORMATION
LSC02120DW

Package Dimension :

TO-252

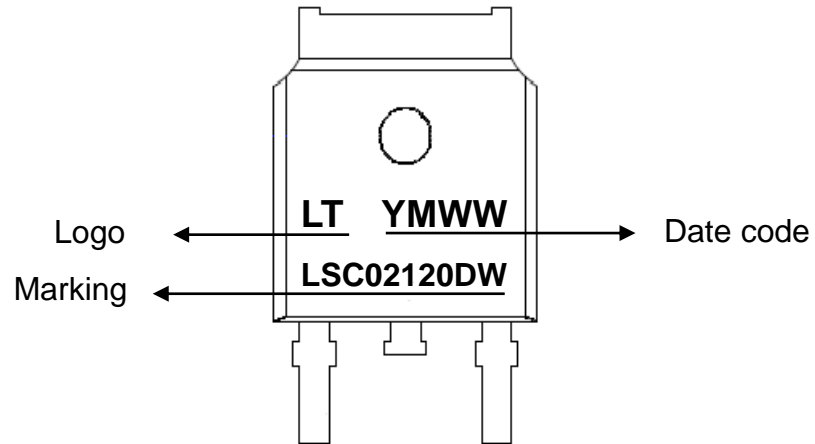


TO-252			
DIM	MIN	TYP	MAX
A	2.20	2.30	2.40
A1	0.00	--	0.15
A2	0.97	1.07	1.17
b	0.68	0.78	0.90
b1	0.66	0.76	0.88
b3	5.20	5.33	5.50
C	0.43	0.53	0.63
C1	0.41	0.51	0.61
C2	0.43	0.53	0.63
D	5.98	6.10	6.22
D1	5.30 REF		
E	6.40	6.60	6.80
E1	4.63	4.83	5.03
e	2.286 REF		
H	9.40	10.10	10.50
L	1.38	1.50	1.75
L1	2.90 REF		
L2	0.51 BSC		
L3	0.88	--	1.28
L4	--	--	1.00
L6	1.65	1.80	1.95
θ	0°	--	8°
$\theta 1$	5°	7°	9°
$\theta 2$	5°	7°	9°
All dimension in millimeter			



MECHANICAL AND MARKING INFORMATION
LSC02120DW

Marking Information :



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