

TRENCH SCHOTTKY RECTIFIER

**REVERSE VOLTAGE – 45 Volts
FORWARD CURRENT – 10 Amperes**

FEATURES

- Low forward voltage drop
- Trench Schottky technology
- Low power loss, high efficiency
- Qualification is according to AEC-Q101 Rev_C
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

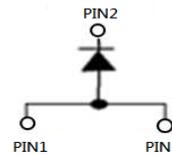
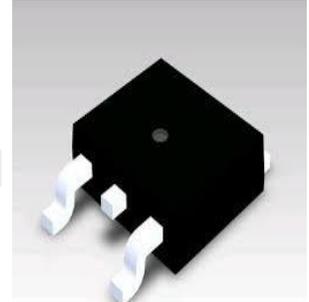
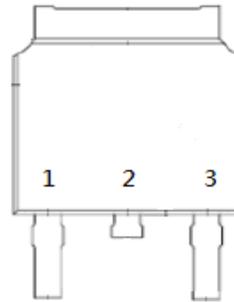
APPLICATION

- Low voltage high frequency inverters
- Polarity protection application
- Freewheeling diodes

MECHANICAL DATA

- Package: JEDEC TO-252
- Package 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: 0.347 grams (Approximate)
- Marking code: C1045DW

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}	45	V
Maximum DC blocking voltage	V_{DC}	45	V
Maximum Average rectified output current	$I_{(AV)}$	10	A
Peak forward surge current 8.3 ms single half sine-wave Superimposed on rated load.	I_{FSM}	120	A
Operating junction and Storage Temperature range	T_J, T_{STG}	-55 ~ +150	°C

STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage (Note 4)	$I_F=10A$ $T_J=25^\circ C$ $T_J=125^\circ C$	V_F	-- 0.47	0.540 0.520	V
Reverse Leakage current	$V_R=45V$ $T_J=25^\circ C$ $T_J=125^\circ C$	I_R	-- 60	300 100	μA mA
Typical junction capacitance (Note 5)		C_J		1160	pF

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Note 6,7)	R_{thJC}	8	°C/W
	R_{thJL}	12	
	R_{thJA}	30	

Note :

REV.-2 , Oct-2021, KTHB21

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. 300us pulse width, 2% duty cycle.
5. Measured at 1.0MHz and applied voltage of 4.0VDC.
6. Thermal resistance test performed in accordance with JESD-51.
7. The unit mounted on Aluminum substrate PC board with additional Fin-type heatsink (15.95mmx35.19mmx22.85mm).

RATING AND CHARACTERISTIC CURVES
C1045DW

FIG.1 FORWARD CURRENT DERATING CURVE

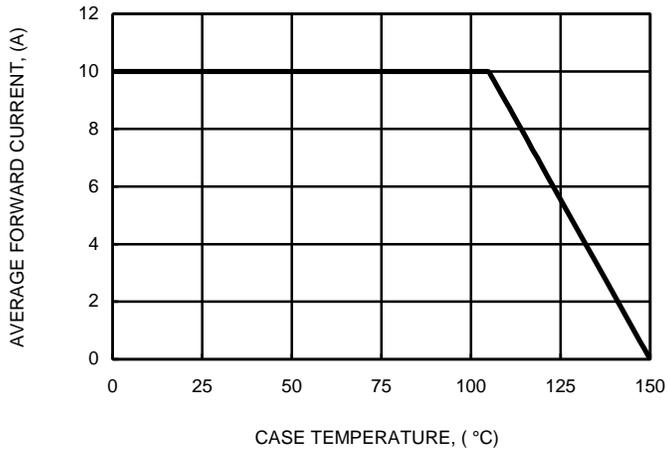


FIG.2 MAXIMUM NON-REPETITIVE SURGE CURRENT

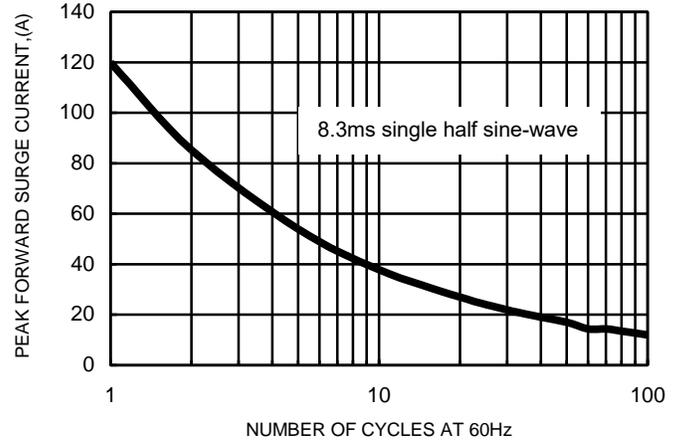


FIG.3 TYPICAL FORWARD CHARACTERISTICS

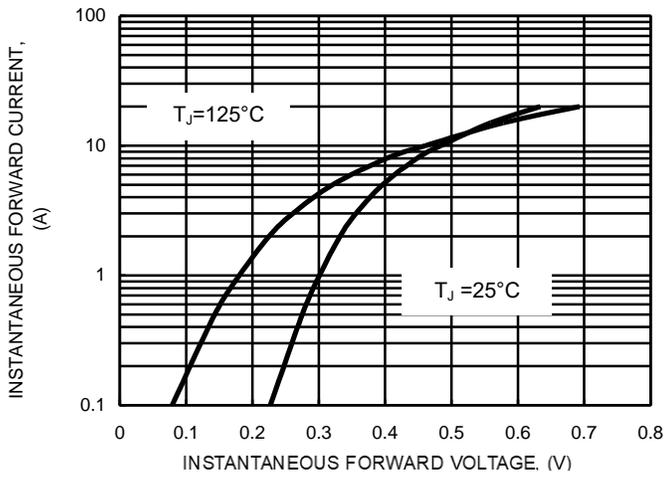


FIG.4 TYPICAL JUNCTION CAPACITANCE

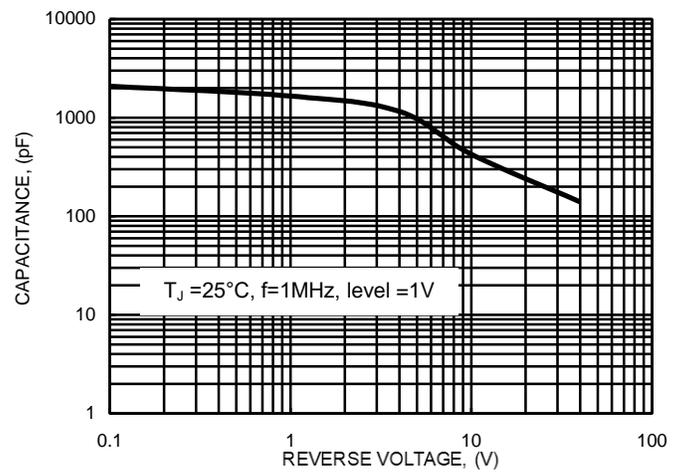
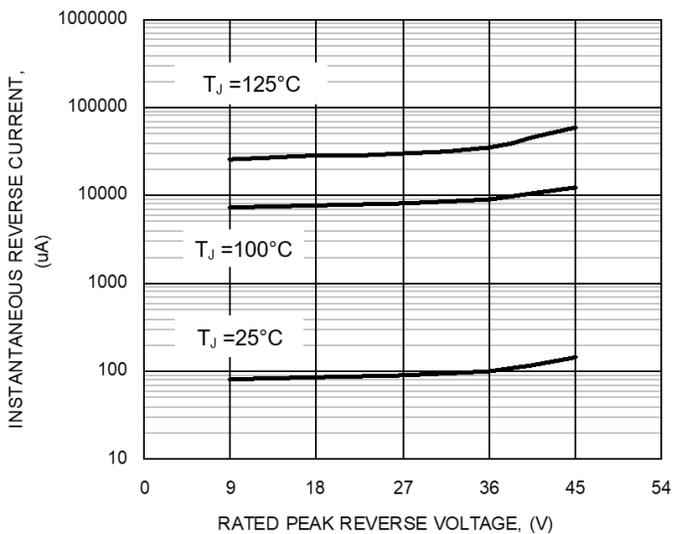


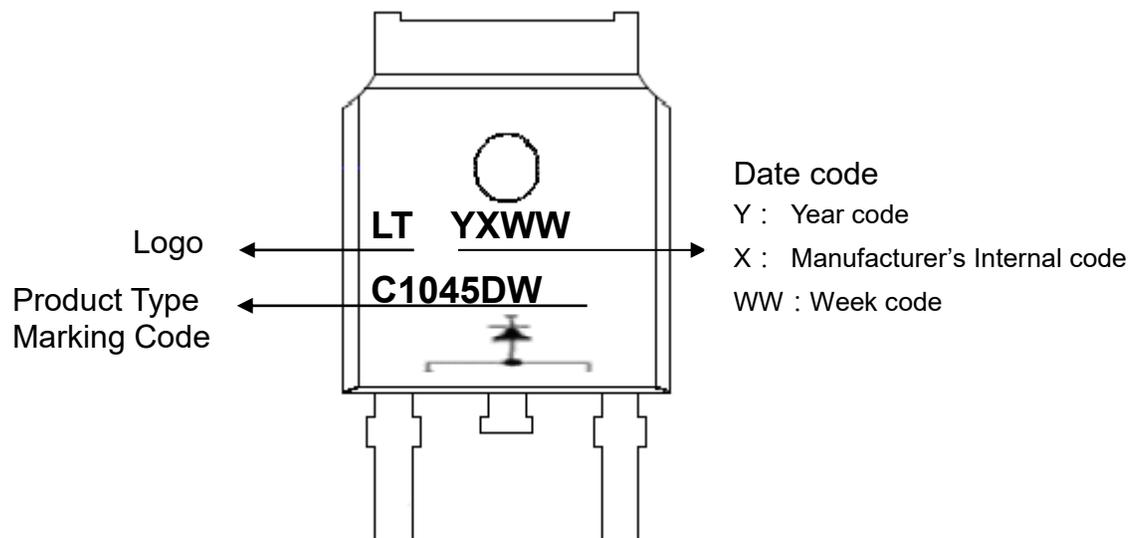
FIG.5 TYPICAL REVERSE CHARACTERISTICS



Ordering Information :

Part Number	Package	Packing	
		Qty.	Carrier
C1045DW	TO252	2500	Tape & Reel

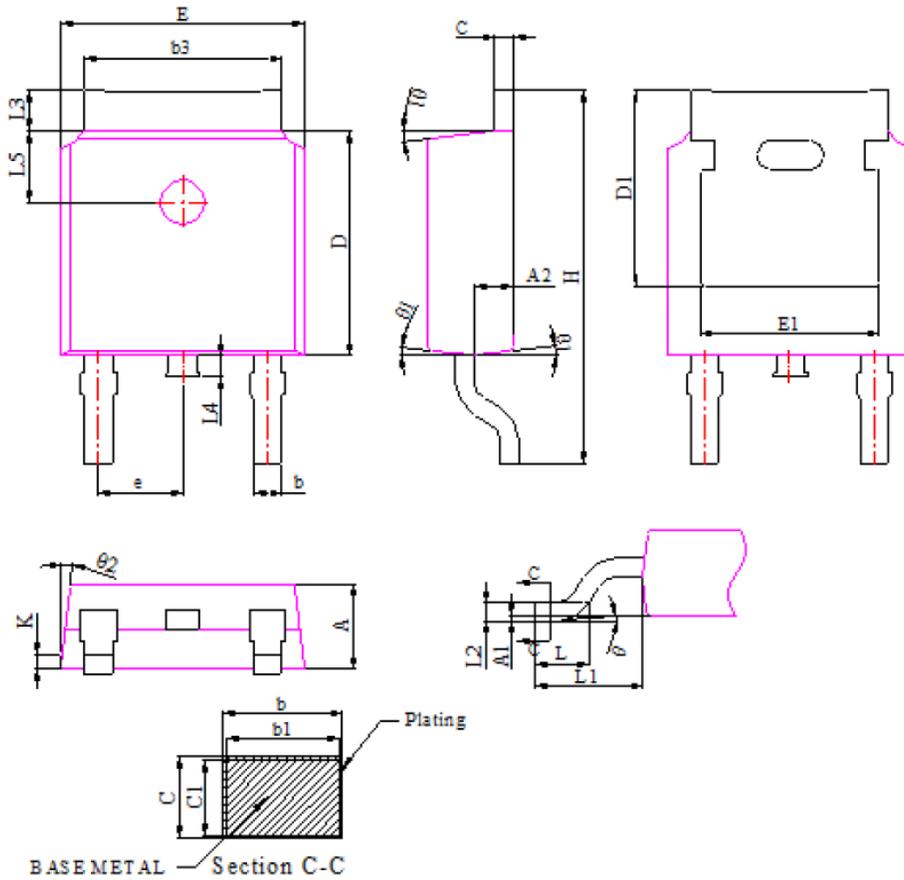
Marking Information :



MECHANICAL AND MARKING INFORMATION
C1045DW

Package Dimension :

TO252



TO252		
DIM.	MIN.	MAX.
A	2.20	2.40
A1	0.00	0.15
A2	0.97	1.17
b	0.68	0.90
b1	0.66	0.88
b3	5.20	5.50
C	0.43	0.63
C1	0.41	0.61
D	5.98	6.22
D1	5.30REF	
E	6.40	6.80
E1	4.63	5.03
e	2.286REF	
H	9.40	10.50
L	1.38	1.75
L1	2.90REF	
L2	0.51BSC	
L3	0.88	1.28
L4	-	1.00
L5	1.65	1.95
θ	0°	8°
θ1	5°	9°
θ2	5°	9°
K	0.40REF	

All dimensions in millimeter

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