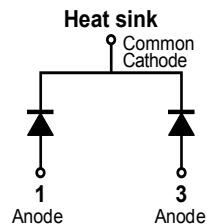


### DSTB2045C



#### Pin out



#### Description

Littelfuse DST series Ultra Low  $V_F$  Schottky Barrier Rectifier is designed to meet the general requirements of commercial and industry applications by providing high temperature, low leakage and low  $V_F$  products.

It is suitable for high frequency switching mode power supply applications, as free-wheeling and polarity protection diodes.

#### Features

- Ultra low forward voltage drop
- High frequency operation
- High junction temperature capability
- Guard ring for enhanced ruggedness and long term reliability
- Common cathode configuration in TO-263 package

#### Applications

- Switching mode power supply
- DC/DC converters
- Free-Wheeling diodes
- Polarity Protection Diodes

#### Maximum Ratings

Parameters	Symbol	Test Conditions	Max	Unit
Peak Inverse Voltage	$V_{RWM}$	-	45	V
Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 80^\circ\text{C}$ rectangular wave form	10 (per leg) 20 (total device)	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	150	A

#### Electrical Characteristics

Parameters	Symbol	Test Conditions	Max	Unit
Forward Voltage Drop (per leg) *	$V_{F1}$	@10A, Pulse, $T_J = 25^\circ\text{C}$	<0.5	V
	$V_{F2}$	@10A, Pulse, $T_J = 125^\circ\text{C}$	0.42	
Reverse Current (per leg) *	$I_{R1}$	@ $V_R = \text{rated } V_R$ , $T_J = 25^\circ\text{C}$	0.003 - 0.018	mA
	$I_{R2}$	@ $V_R = \text{rated } V_R$ , $T_J = 125^\circ\text{C}$	5.5 - 15	

\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2%

### Thermal-Mechanical Specifications

Parameters	Symbol	Test Conditions	Max	Unit
Junction Temperature	$T_J$		-55 to +150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C
Typical Thermal Resistance Junction to Case(per leg)	$R_{\theta JC}$	DC operation	3.0	°C/W
Approximate Weight	wt		1.85	g
Case Style	D <sup>2</sup> PAK (TO-263)			

Figure 1: Typical Forward Characteristics

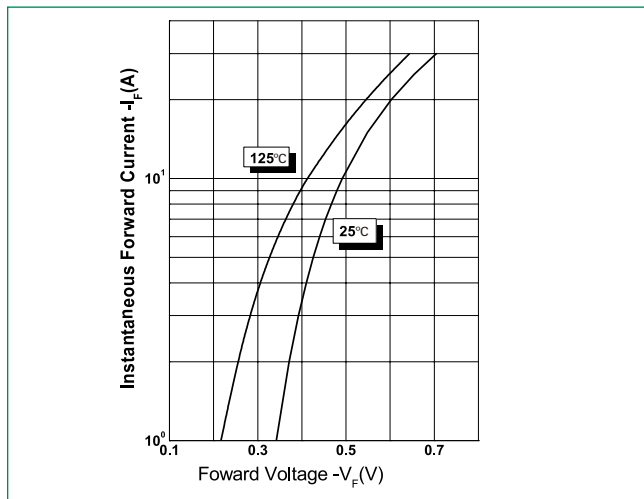


Figure 2: Typical Reverse Characteristics

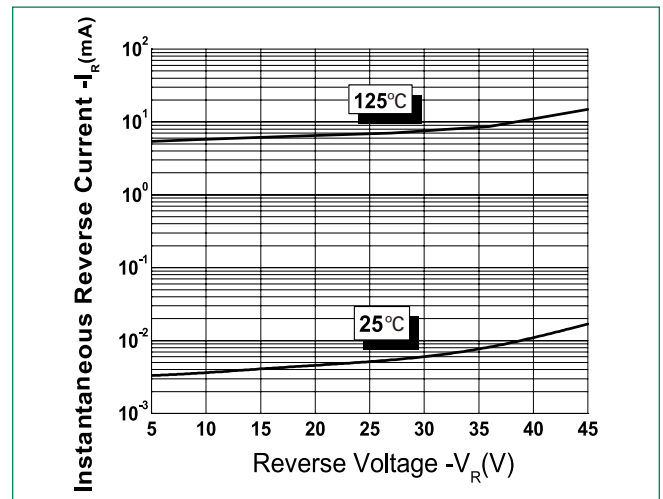
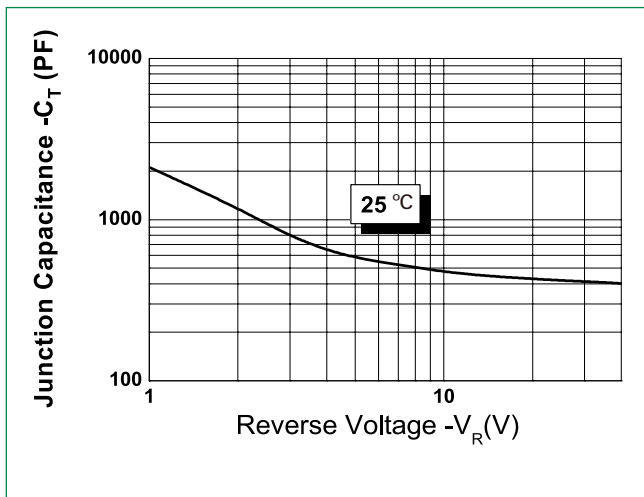
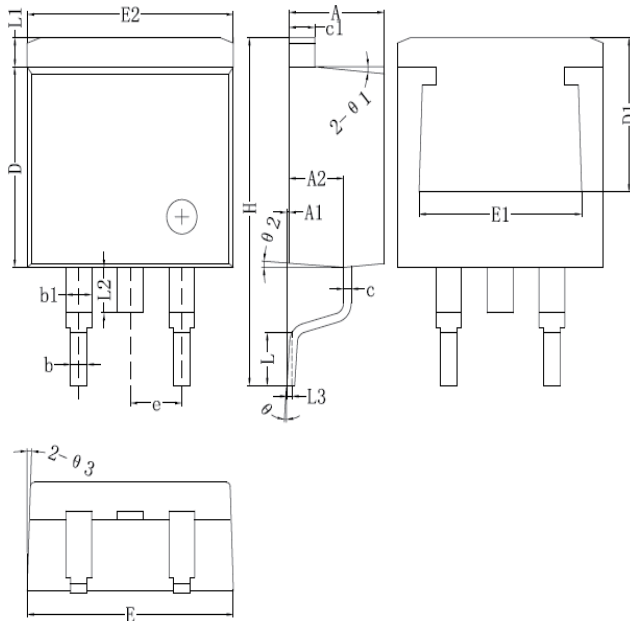


Figure 3: Typical Junction Capacitance

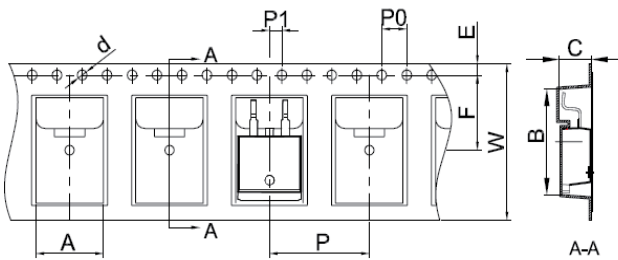


### Dimensions-D<sup>2</sup>PAK(TO-263)



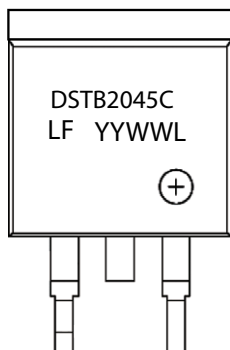
Symbol	Dimensions in Millimeters		
	Min	Typical	Max
<b>A</b>	4.47	4.70	4.85
<b>A1</b>	0	0.10	0.25
<b>A2</b>	2.59	2.69	2.89
<b>b</b>	0.71	0.81	0.96
<b>b1</b>	1.17	1.27	1.37
<b>c</b>	0.31	0.38	0.61
<b>c1</b>	1.17	1.27	1.37
<b>D</b>	8.50	8.70	8.90
<b>D1</b>	6.70	-	7.70
<b>E</b>	10.01	10.16	10.31
<b>E1</b>	7.2	-	8.1
<b>E2</b>	9.98	10.08	10.31
<b>e</b>	-	2.54	-
<b>H</b>	14.6	15.1	15.6
<b>L</b>	2.00	2.30	2.74
<b>L1</b>	1.12	1.27	1.42
<b>L2</b>	1.30	-	2.20
<b>L3</b>	-	0.25BSC	-
<b>e</b>	0	-	8°
<b>e1</b>	-	5°	-
<b>e2</b>	-	4°	-
<b>e3</b>	-	4°	-

### Carrier Tape & Reel Specification



Symbol	Millimeters	
	Min	Max
<b>A</b>	10.70	10.90
<b>B</b>	16.03	16.23
<b>C</b>	5.11	5.31
<b>d</b>	ø1.45	ø1.65
<b>E</b>	1.65	1.85
<b>F</b>	11.40	11.60
<b>P0</b>	3.90	4.10
<b>P</b>	15.90	16.10
<b>P1</b>	1.90	2.10
<b>W</b>	23.90	24.30

### Part Numbering and Marking System



**DST** = Component Type  
**B** = Package Type  
**20** = Forward Current (20A)  
**45** = Reverse Voltage (45V)  
**C** = Configuration  
**LF** = Littelfuse  
**YY** = Year  
**WW** = Week  
**L** = Lot Number

### Packing Options

Part Number	Marking	Packing Mode	M.O.Q
DSTB2045C	DSTB2045C	800pcs / reel	800

**Disclaimer Notice** - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at <http://www.littelfuse.com/disclaimer-electronics>.