

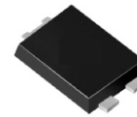
CDBHA30100LR-HF

Reverse Voltage: 100V

Forward Current: 30A

RoHS Device

Halogen Free



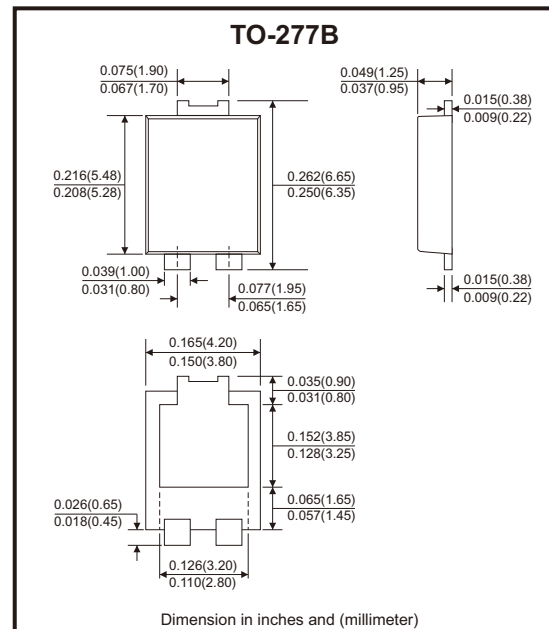
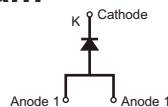
Features

- Metal silicon junction, majority carrier conduction.
- Guard ring for overvoltage protection.
- Low power loss, high efficiency.
- High current capability, low forward voltage drop.
- High surge capability.
- Ideal for automated placement.

Mechanical data

- Case: TO-277B, molded plastic.
- Terminals: Plated axial leads, solderable per MIL-STD-750, method 2026.
- Mounting position: Any.

Circuit Diagram



Maximum Ratings (at $T_A=25^\circ\text{C}$, unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	100	V
Maximum average forward rectified current	$I_{F(AV)}$	30	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated T_L)	I_{FSM}	200	A
Typical thermal resistance (Note 1)	$R_{\theta JA}$ (Note 2)	60	$^\circ\text{C/W}$
	$R_{\theta JL}$	3	
Operating junction temperature range	T_J	-55 to +150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^\circ\text{C}$

Notes: 1. Units mounted on recommended PCB 1 oz. Pad layout.

2. The heat generated must be less than thermal conductivity from junction to ambient: $dPD/dT_J < 1/R_{\theta JA}$.

Electrical Characteristics (at $T_A=25^\circ\text{C}$, unless otherwise noted)

Parameter	Conditions		Symbol	Min.	Typ.	Max.	Unit
Instantaneous forward voltage (Note 1)	$T_J = 25^\circ\text{C}$	$I_F = 30\text{A}$	V_F		0.75	0.77	V
		$I_F = 10\text{A}$			0.54		
		$I_F = 5\text{A}$			0.47		
	$T_J = 125^\circ\text{C}$	$I_F = 30\text{A}$			0.73		
		$I_F = 10\text{A}$			0.51		
		$I_F = 5\text{A}$			0.40		
Reverse current (Note 2)	$V_R = 100\text{V}$	$T_A = 25^\circ\text{C}$	I_R		30	100	μA
		$T_A = 100^\circ\text{C}$			5		mA
		$T_A = 125^\circ\text{C}$			20		
Typical junction capacitance	$V_R = 4\text{V}$, $f = 1\text{MHz}$		C_J		1200		pF

Notes: 1. Pulse test: 300 μs pulse width, 1% duty cycle.

2. Pulse test: pulse width $\leq 40\text{ms}$.

Rating and Characteristics Curves (CDBHA30100LR-HF)

Fig.1 - Forward Current Derating Curve

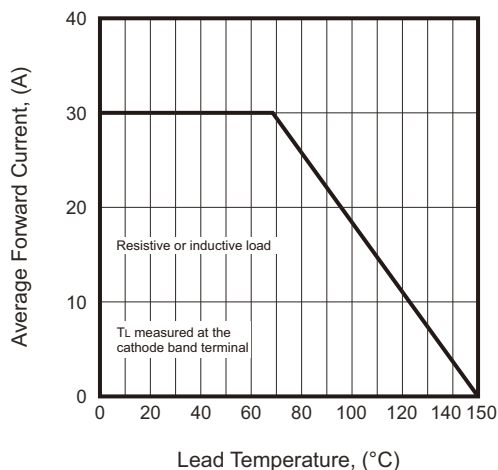


Fig.2 - Maximum Non-Repetitive Peak Forward Surge Current

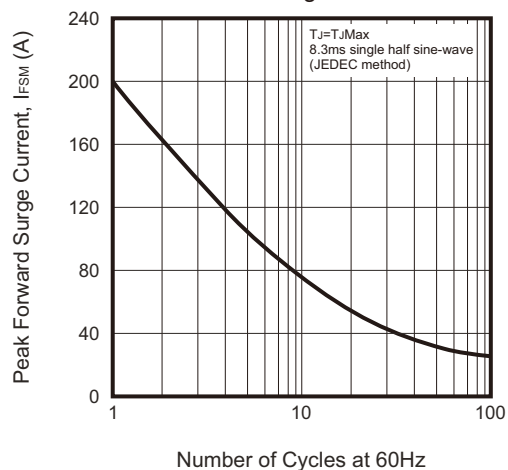


Fig.3 - Typical Instantaneous Forward Characteristics

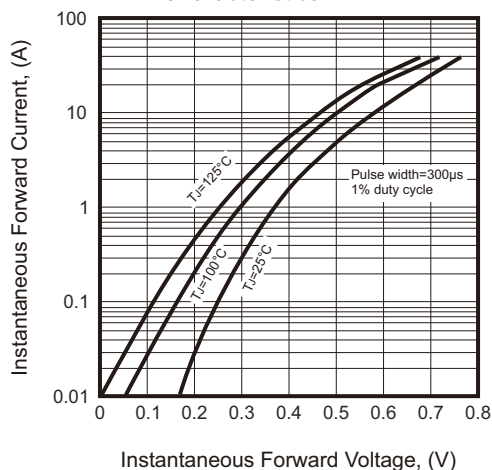


Fig.4 - Typical Reverse Characteristics

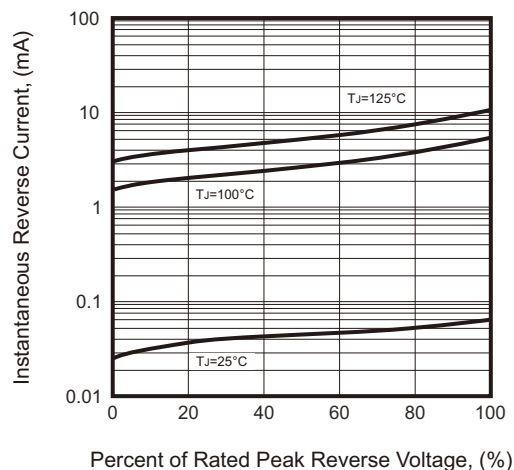
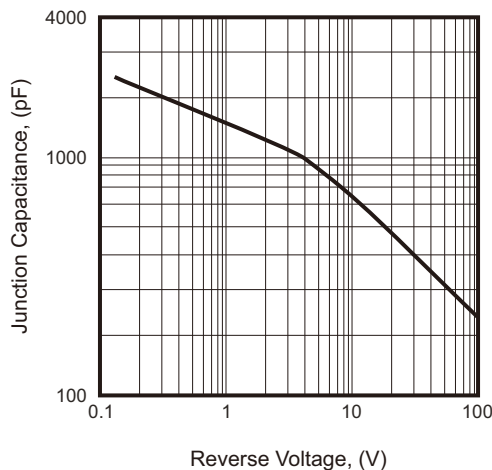
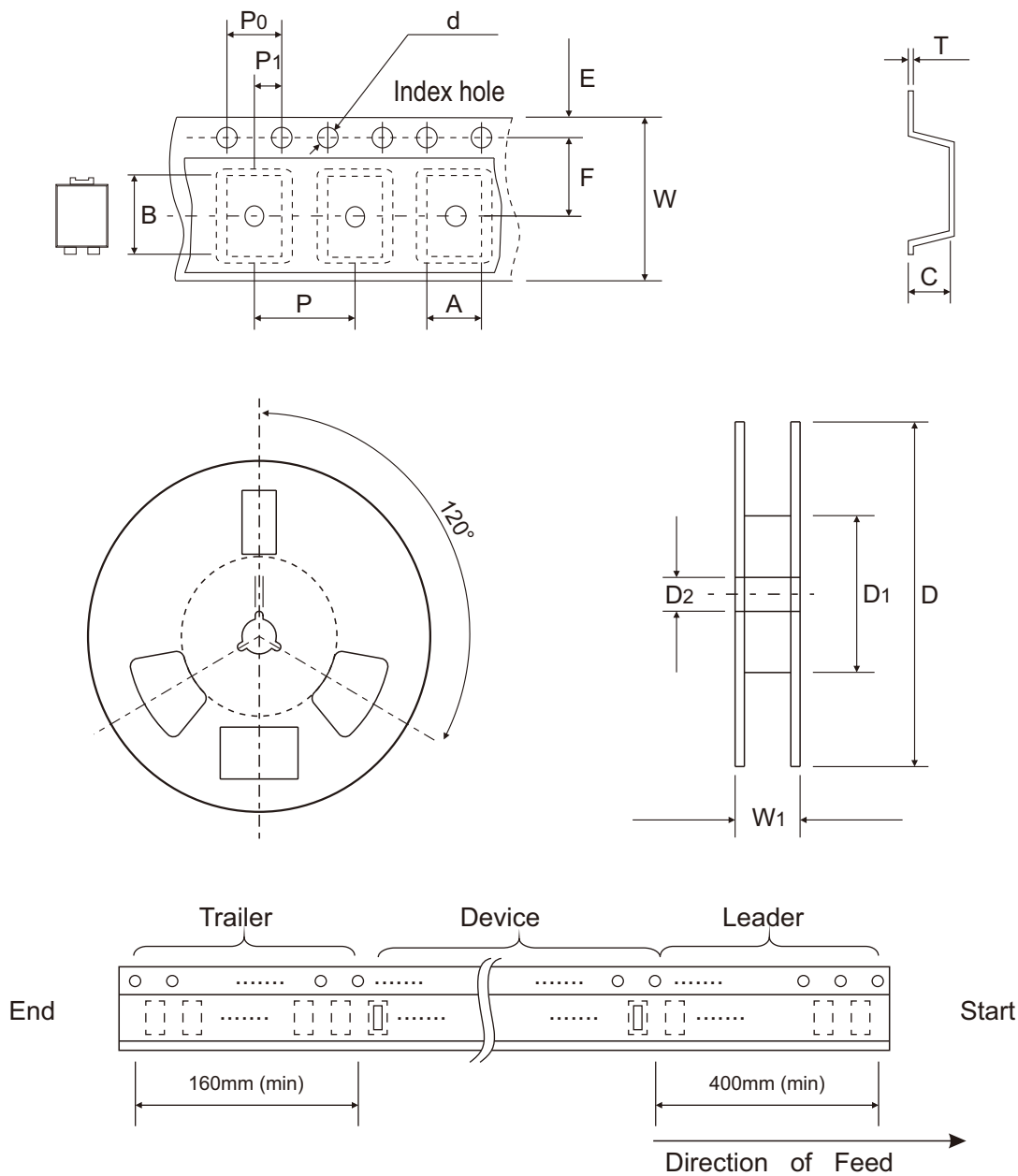


Fig.5 - Typical Junction Capacitance



Reel Taping Specification



TO-277B	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	4.38 ± 0.10	6.90 ± 0.10	4.00 ± 0.10	1.55 ± 0.05	330 ± 2.00	75.00 ± 1.00	13.30 ± 0.30
	(inch)	0.172 ± 0.004	0.272 ± 0.004	0.157 ± 0.004	0.061 ± 0.002	12.992 ± 0.079	2.953 ± 0.039	0.524 ± 0.012

TO-277B	SYMBOL	E	F	P	P ₀	P ₁	T	W	W ₁
	(mm)	1.75 ± 0.10	7.50 ± 0.10	8.00 ± 0.07	4.00 ± 0.07	2.00 ± 0.07	0.30 ± 0.05	16.00 ± 0.20	16.40 ± 0.50
	(inch)	0.069 ± 0.004	0.295 ± 0.004	0.315 ± 0.003	0.157 ± 0.003	0.079 ± 0.003	0.012 ± 0.002	0.630 ± 0.008	0.646 ± 0.020

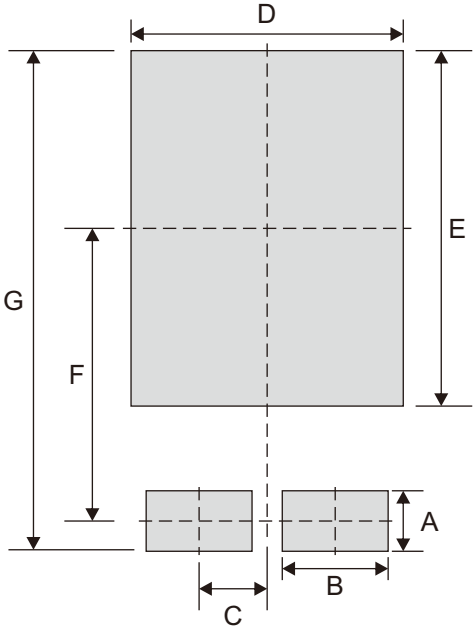
Marking Code

Part Number	Marking Code
CDBHA30100LR-HF	SP30U100L



Suggested P.C.B. PAD Layout

SIZE	TO-277B	
	(mm)	(inch)
A	0.80	0.031
B	1.40	0.055
C	0.90	0.035
D	3.60	0.142
E	4.70	0.185
F	3.87	0.152
G	6.60	0.260



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
TO-277B	5,000	13