

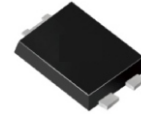
## CDBHA30100LR-HF

Reverse Voltage: 100V

Forward Current: 30A

RoHS Device

Halogen Free



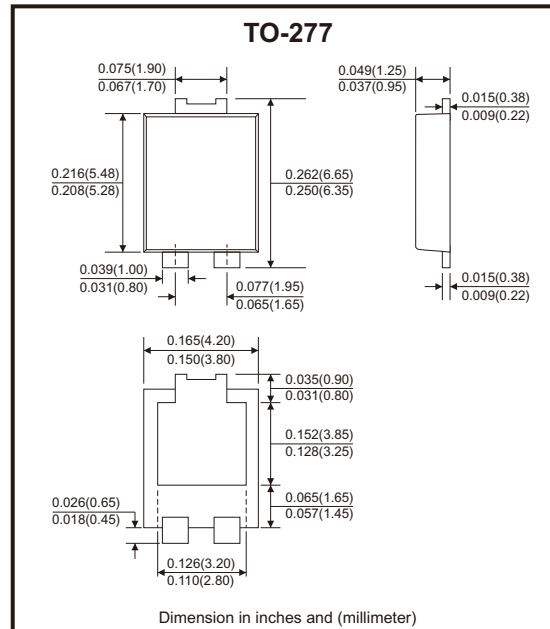
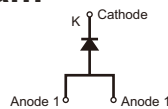
### Features

- 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	$^\circ\text{C}/\text{W}$
	$R_{\theta JL}$	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)	$T_J = 25^\circ\text{C}$	$I_F = 30\text{A}$		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)	$V_R = 100\text{V}$	$T_A = 25^\circ\text{C}$		30	100	$\mu\text{A}$
		$T_A = 100^\circ\text{C}$		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 $\mu\text{s}$  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

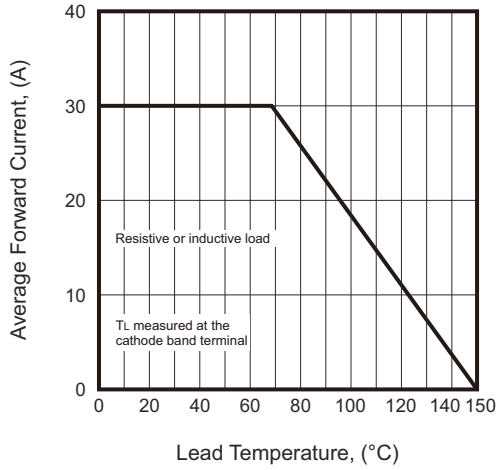


Fig.2 - Maximum Non-Repetitive Peak Forward Surge Current

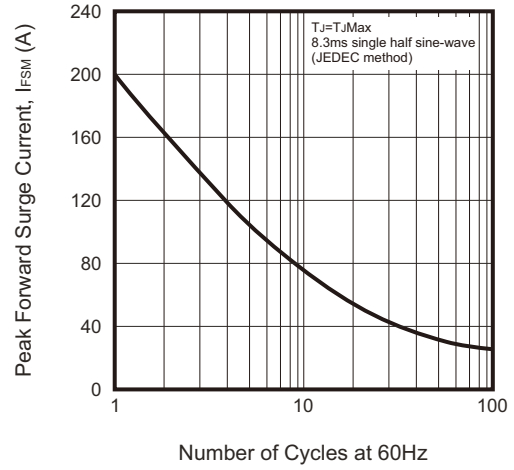


Fig.3 - Typical Instantaneous Forward Characteristics

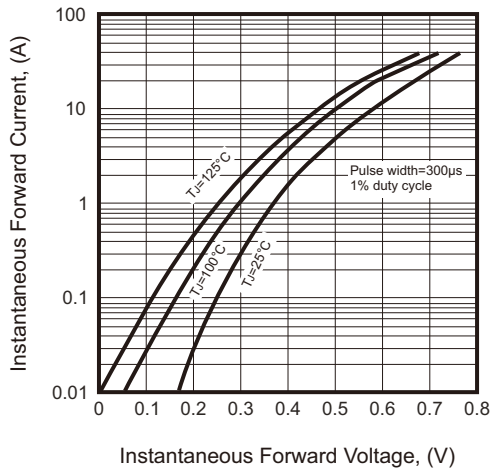


Fig.4 - Typical Reverse Characteristics

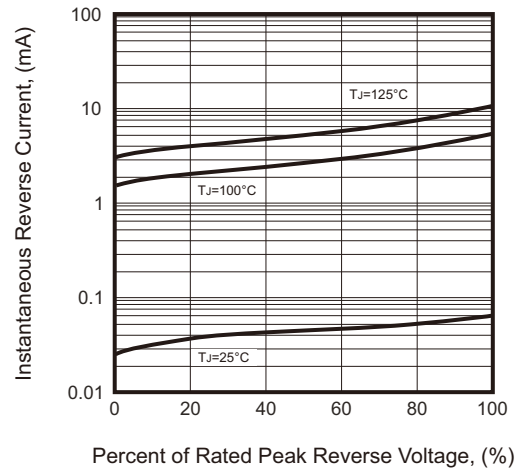
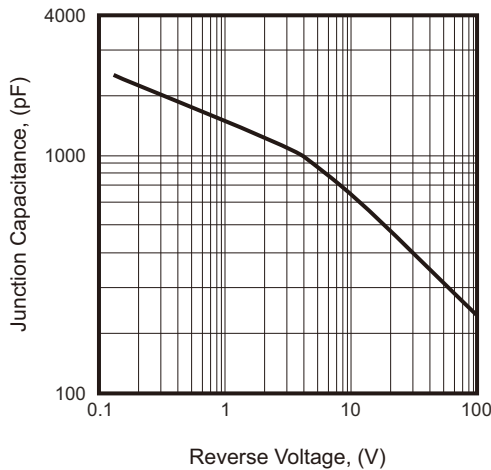
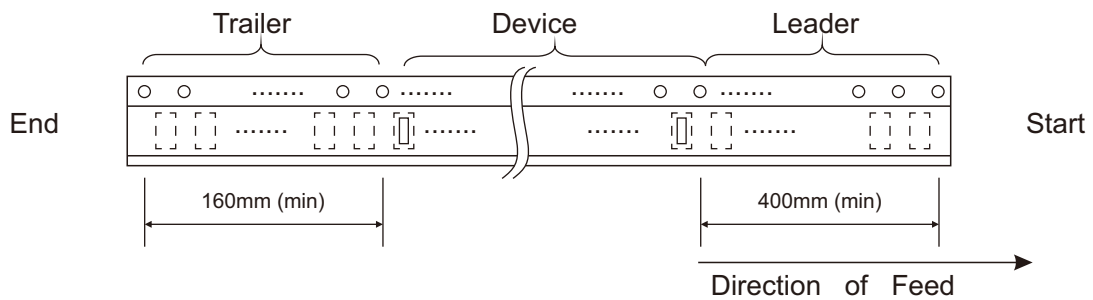
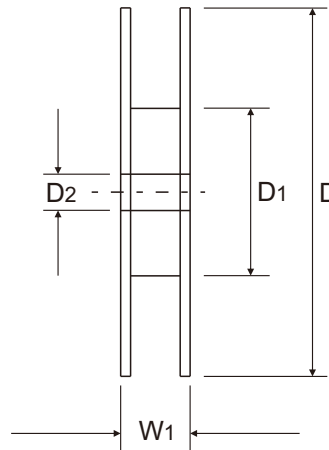
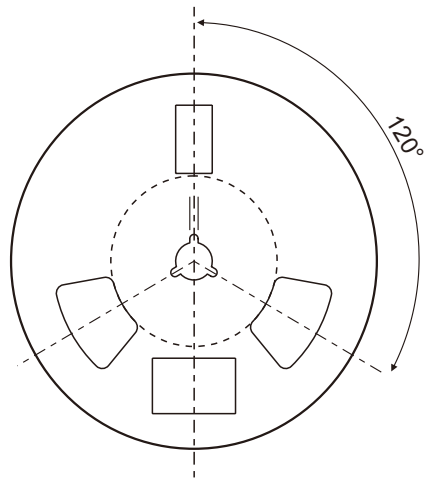
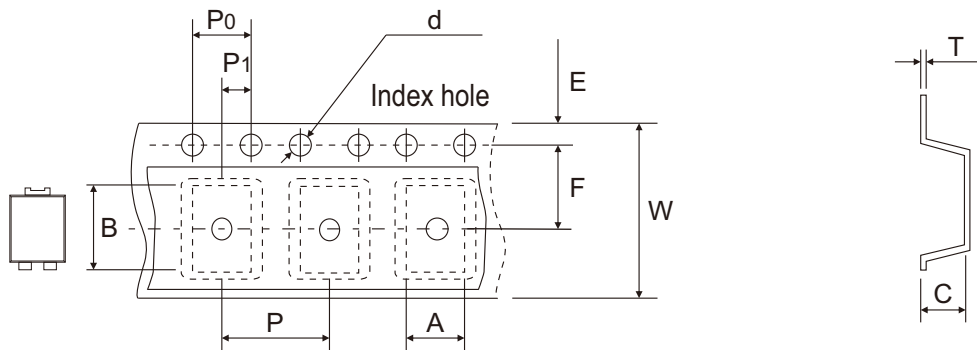


Fig.5 - Typical Junction Capacitance



## 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	P0	P1	T	W	W1
	(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