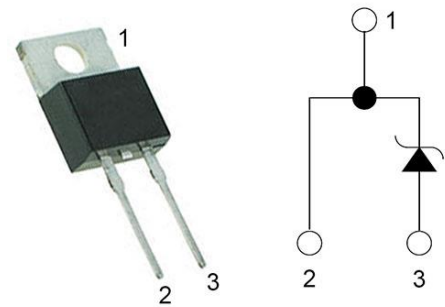


Product Summary

$V_R = 1200\text{ V}$
 $I_F = 10\text{ A}$ ($T_C=150^\circ\text{C}$)
 $Q_C = 55\text{ nC}$ ($V_R=800\text{ V}$)



TO-220-2

Features

- Zero Forward/Reverse Recovery Current
- High Blocking Voltage
- High Frequency Operation
- Positive Temperature Coefficient on V_F
- Temperature Independent Switching Behavior
- High surge current capability
- 100% avalanche tested

Benefits

- Higher System Efficiency
- Parallel Device Convenience without thermal runaway
- Higher Temperature Application
- No Switching loss
- Hard Switching & Higher Reliability
- Environmental Protection

Applications

- Motor Drives
- Solar / Wind Inverters
- AC/DC converters
- DC/DC converters
- Uninterruptable power supplies

Maximum Ratings ($T_C=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}		1200	V
Peak Reverse Surge Voltage	V_{RSM}		1200	V
DC Blocking Voltage	V_R		1200	V
Continuous Forward Current	I_F	$T_C=25^\circ\text{C}$ $T_C=135^\circ\text{C}$ $T_C=150^\circ\text{C}$	30 14 10	A
Non repetitive Forward Surge Current	I_{FSM}	$T_C = 25^\circ\text{C}$, $t_p=10\text{ ms}$, Half Sine Pulse $T_C = 110^\circ\text{C}$, $t_p=10\text{ ms}$, Half Sine Pulse	100 90	A
Repetitive peak Forward Surge Current	I_{FRM}	$T_C = 25^\circ\text{C}$, $t_p=10\text{ ms}$, Freq = 0.1Hz, 100 cycles, Half Sine Pulse $T_C = 110^\circ\text{C}$, $t_p=10\text{ ms}$, Freq = 0.1Hz, 100 cycles, Half Sine Pulse	90 80	A
Total power dissipation	P_D	$T_C=25^\circ\text{C}$ $T_C=110^\circ\text{C}$	158 68	W
Diode dv/dt ruggedness	dv/dt	$V_R = 0\text{-}1200\text{ V}$	80	V/ns
Operating Junction Temperature	T_J		-55 to 175	$^\circ\text{C}$
Storage Temperature	T_{STG}		-55 to 175	$^\circ\text{C}$

Electrical Characteristics

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
DC Blocking Voltage	V_{DC}	$T_J = 25^{\circ}C$	1200			V
Forward Voltage	V_F	$I_F = 10A, T_J = 25^{\circ}C$		1.45	1.75	V
		$I_F = 10A, T_J = 125^{\circ}C$		1.75		
		$I_F = 10A, T_J = 175^{\circ}C$		2.0		
Reverse Current	I_R	$V_R = 1200V, T_J = 25^{\circ}C$		5	100	uA
		$V_R = 1200V, T_J = 125^{\circ}C$		25		
		$V_R = 1200V, T_J = 175^{\circ}C$		60		
Total Capacitive Charge	Q_C	$V_R = 800V,$ $T_J = 25^{\circ}C$		55		nC
Total Capacitance	C	$V_R = 1V, T_J = 25^{\circ}C,$ Freq = 1MHz		610		pF
		$V_R = 400V, T_J = 25^{\circ}C,$ Freq = 1MHz		52		
		$V_R = 800V, T_J = 25^{\circ}C,$ Freq = 1MHz		36		

Note: This is a majority carrier diode, so there is no reverse recovery charge

Thermal Characteristics

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Thermal Resistance	$R_{th(j-c)}$	junction-case		0.95		$^{\circ}C/W$

Typical Electrical Curves

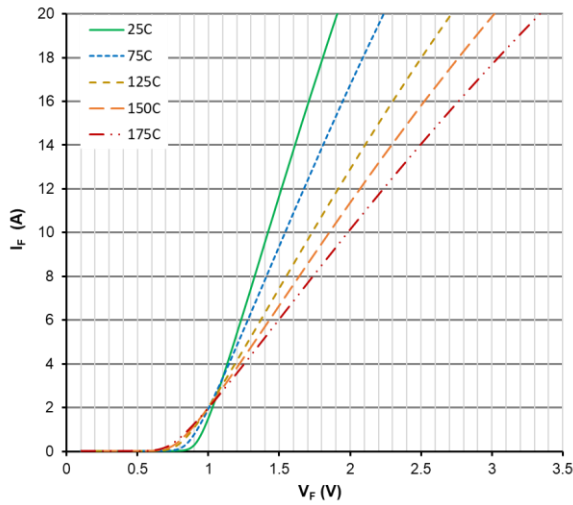


Figure 1. Forward Characteristics

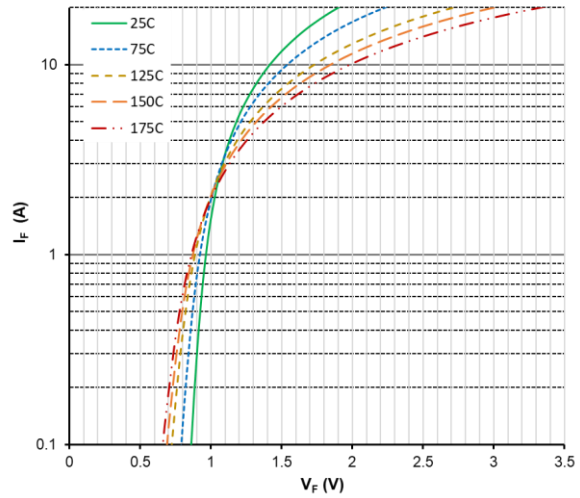


Figure 2. Forward Characteristics

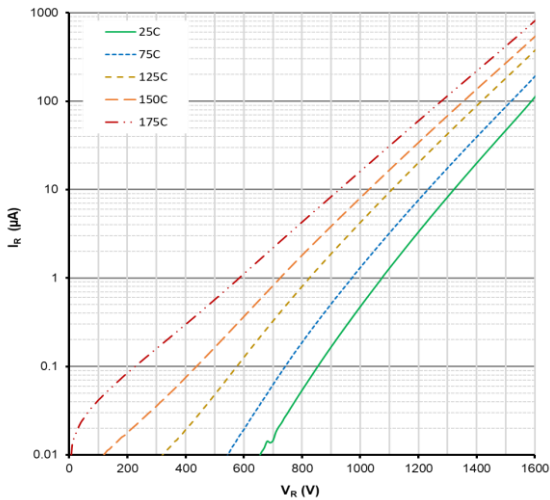


Figure 3. Reverse Characteristics

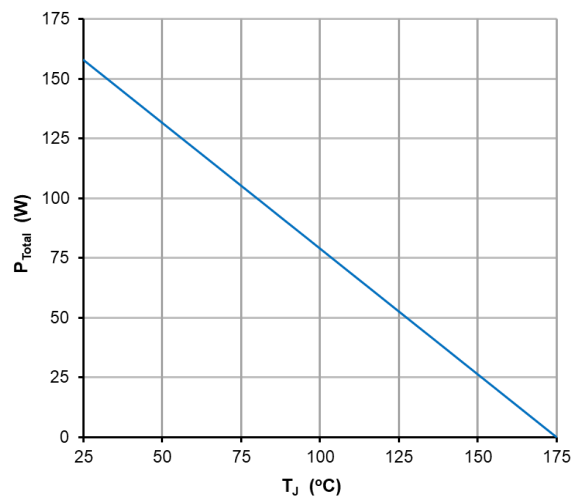


Figure 4. Power Derating

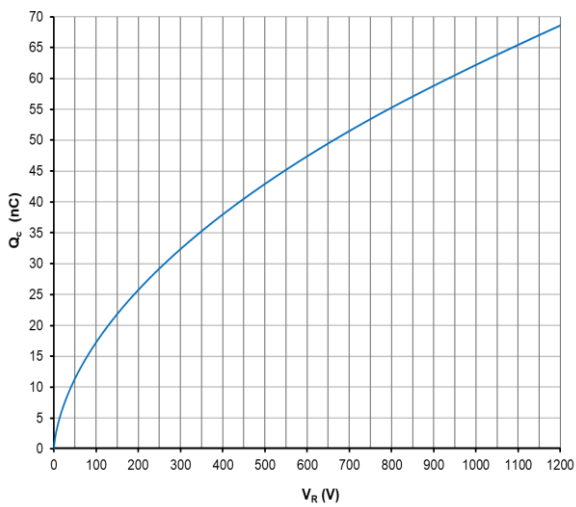


Figure 5. Capacitance charge vs. Reverse Voltage

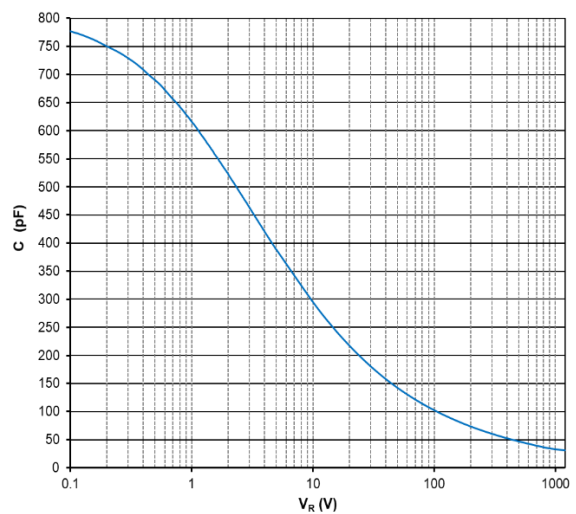
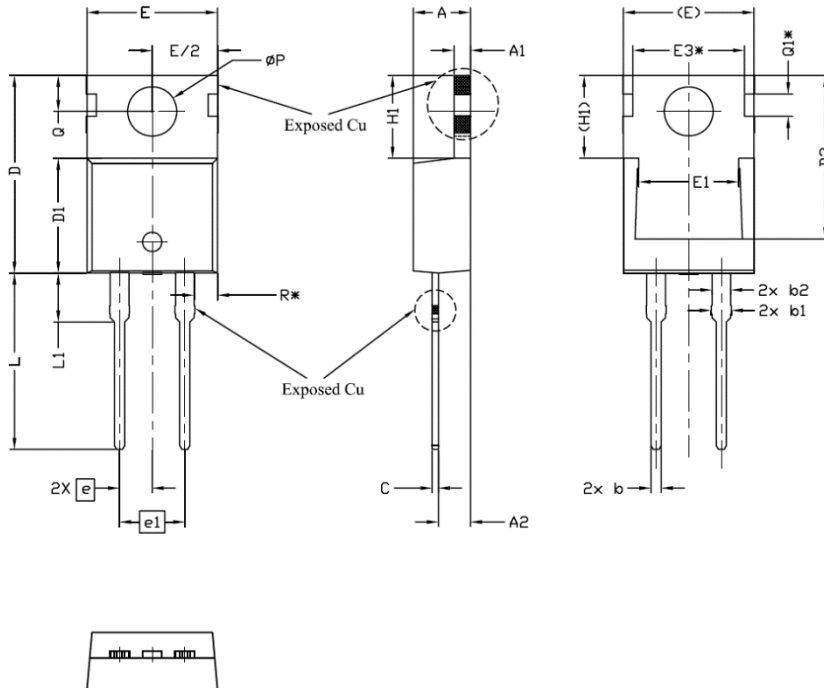


Figure 6. Capacitance vs. Reverse Voltage

Package Dimensions

(TO-220-2 Package)



SYMBOL	Dimensions		Notes
	MIN.	MAX.	
A	4.24	4.64	
A1	1.15	1.40	
A2	2.30	2.70	
b	0.70	0.90	
b1	1.20	1.75	
b2	1.20	1.70	
c	0.40	0.60	
D	14.70	16.00	4
D1	8.82	9.02	
D2	12.43	12.83	5
E	9.96	10.36	4, 5
E1	6.86	8.89	5
E3*	8.70REF.		
e	2.54BSC		
e1	5.08BSC		
H1	6.30	6.60	5, 6
L	13.47	13.97	
L1	3.60	4.00	
ϕP	3.75	3.93	
Q	2.60	3.00	
Q1*	1.73REF.		
R*	1.82REF.		

Note:

1. Package Reference: JEDEC TO220, Variation AB.
2. All Dimensions Are In mm.
3. Slot Required, Notch May Be Rounded
4. Dimension D & E Do Not Include Mold Flash. Mold Flash Shall Not Exceed 0.127mm Pre Side. These Dimensions Are Measured At The Outermost Extreme Of The Plastic Body.
5. Thermal Pad Contour Optional Within Dimensions E, H1, D2 & E1.
6. Dimension E2 & H1 Define A Zone Where Stamping And Singulation Irregularities Are Allowed.
7. "*" is reference .

Part Number	Package	Packing	Marking
ACD10PS120C	TO-220-2	50pcs / Tube	ACD10PS120C