

Features

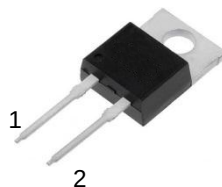
- Negligible reverse recovery
- High-speed switching
- Positive Temperature Coefficient
- Temperature-Independent Switching
- RoHS compliant

V_{RRM}	=	1200	V
$I_F (T_C=161^{\circ}C)$	=	6	A
Q_C	=	33	nC

Benefits

- Higher frequency
- Low heat dissipation requirements
- Reduce size and cost of the system
- High-reliability

Package



TO-220-2

Applications

- Switch mode power supply
- Solar inverter
- Data center
- Uninterruptible power supply



Part Number	Package	Marking
ASLD006120A	TO-220-2	ASLD006120A

Maximum Ratings (Tc=25°C unless otherwise noted)

Symbol	Parameter		Value	Unit	Note
V_{RRM}	Repetitive peak reverse voltage		1200	V	
I_F	Continuous forward current	Tc=25°C	23	A	Figure 3
		Tc=135°C	12	A	
		Tc=161°C	6	A	
I_{FSM}	Non-repetitive forward surge current	Tc=25°C, t _p =10ms,Half sine pulse	48	A	
		Tc=110°C, t _p =10ms,Half sine pulse	43	A	
I_{FRM}	Repetitive Peak forward surge current	Tc=25°C, t _p =10ms,Half sine pulse	40	A	
$\int i^2 dt$	i ² t value	Tc=25°C, t _p =10ms	12	A ² S	
		Tc=110°C, t _p =10ms	9	A ² S	
P_{tot}	Power Dissipation	Tc=25°C	150	W	Figure 4
		Tc=110°C	65	W	
		Tc=150°C	25	W	
T_j, T_{stg}	Operating and Storage Temperature		-55 to +175	°C	

Electrical Characteristics (Tc=25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Value			Unit	Note
			Min.	Typ.	Max.		
V_{DC}	DC blocking voltage		1200	-	-	V	
V_F	Forward voltage	I _F =3A	-	1.20	-	V	Figure 1
		I _F =6A, Tc=25°C	-	1.45	1.70	V	
		I _F =6A, Tc=175°C	-	2.0	-	V	
I_R	Reverse current	V _R =1200V, Tc=25°C	-	2.0	60	uA	Figure 2
		V _R =1200V, Tc=175°C	-	3.0	-	uA	
Q_C	Total capacitive charge	V _R =800V	-	33	-	nC	Figure 6
C	Total capacitance	V _R =1V, f=1MHZ	-	349	-	pF	Figure 5
		V _R =400V, f=1MHZ	-	31	-	pF	
		V _R =800V, f=1MHZ	-	25	-	pF	
E_C	Capacitance Stored Energy	V _R =800V	-	10	-	uJ	Figure 7

Thermal Characteristics

Symbol	Parameter	Value		Unit	Note
		Typ.	Max.		
$R_{th(j-c)}$	Thermal resistance (Junction to case)	1.002	-	°C/W	Figure 8

Electrical Characteristic Curves

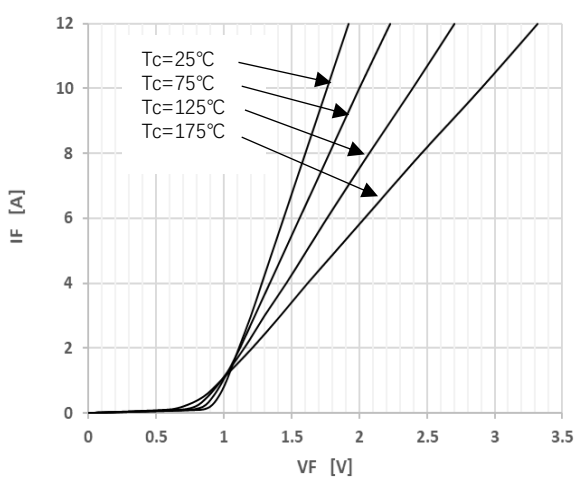


Figure 1 Forward Characteristics

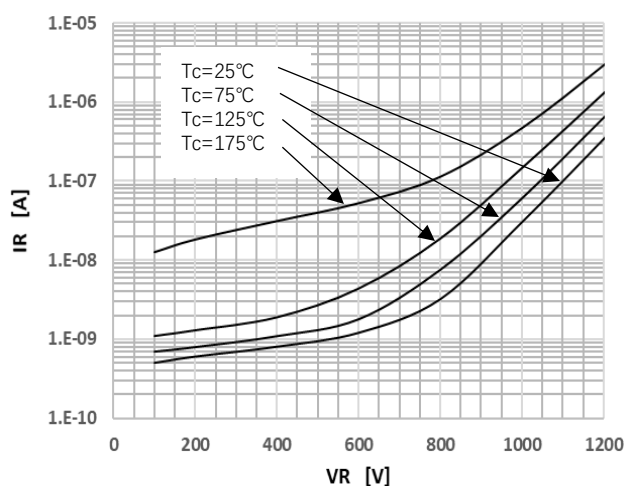


Figure 2 Reverse Characteristics

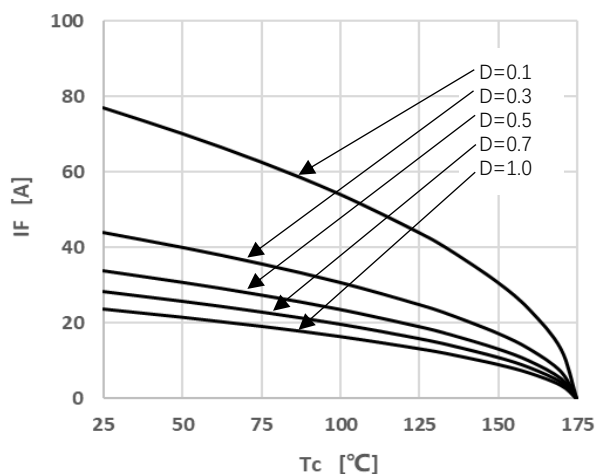


Figure 3 Peak Forward Current Derating

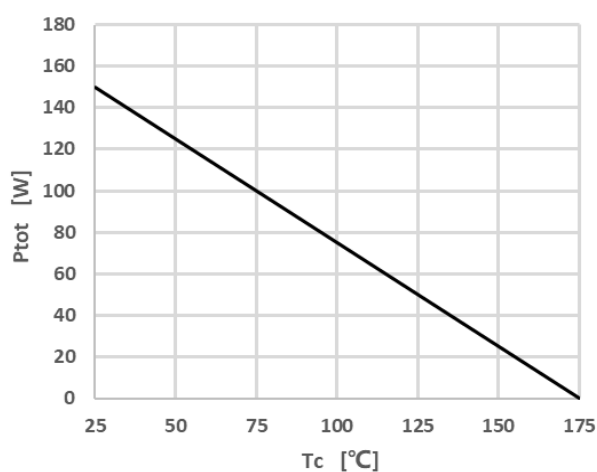


Figure 4 Power Dissipation

Electrical Characteristic Curves

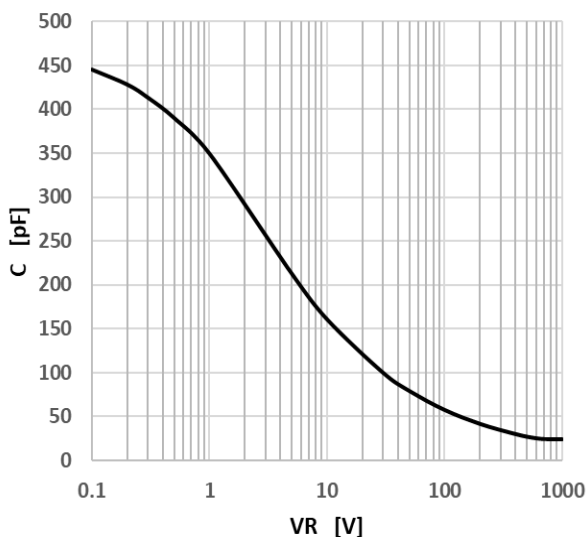


Figure 5 Capacitance vs. Reverse Voltage

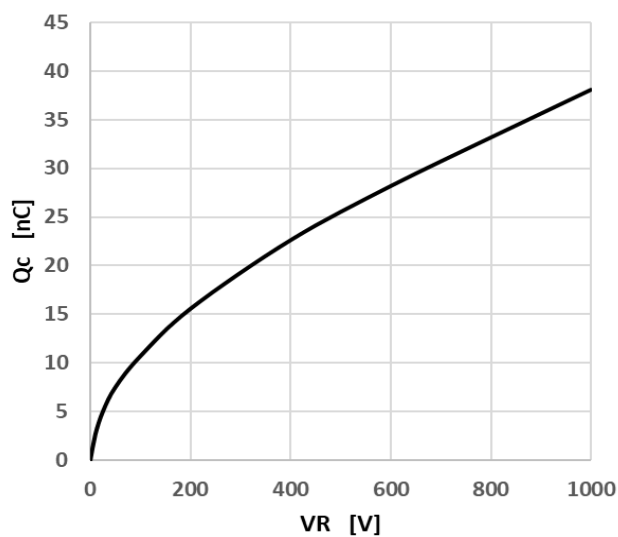


Figure 6 Capacitance Charge vs. Reverse Voltage

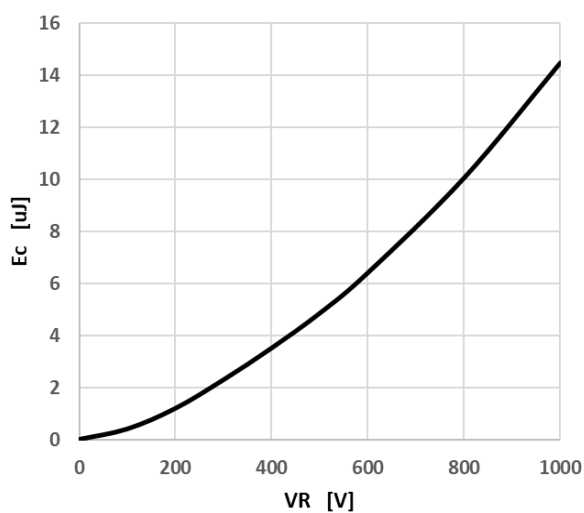


Figure 7 Capacitance Stored Energy

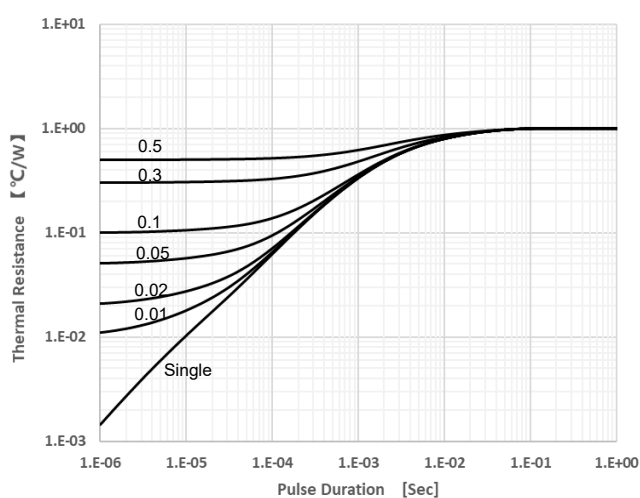
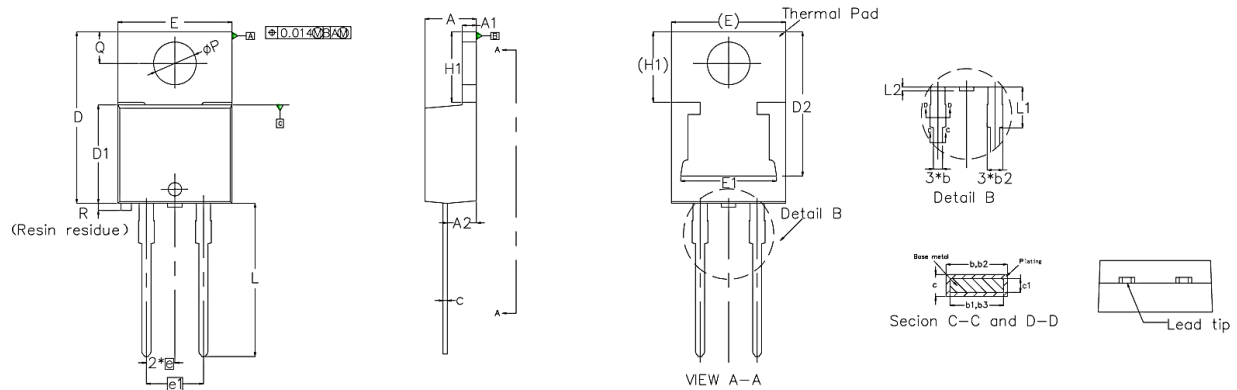


Figure 8 Transient Thermal Impedance

Package Dimensions

Package TO-220-2



SYMBOL	MILLIMETERS			NOTES		SYMBOL	MILLIMETERS			NOTES
	Normal	MIN.	MAX.				Normal	MIN.	MAX.	
A	4.55	4.44	4.65			E1	8.57	8.25	8.89	
A1	1.27	1.14	1.39			e	2.54	2.41	2.67	
A2	2.60	2.54	2.79			e1	5.08	4.95	5.20	
b	0.85	0.69	0.94			H1	6.20	6.09	6.40	
b1	0.83	0.38	0.97			L	13.60	13.52	14.00	
b2	1.33	1.20	1.45			L1	3.60	3.56	3.80	
b3	1.33	1.20	1.45			L2	—	0	0.35	
c	0.50	0.36	0.56			ϕP	3.80	3.70	3.91	
c1	0.48	0.36	0.56			Q	2.80	2.62	2.87	
D	15.25	14.95	15.32			R			0.2	
D1	8.75	8.50	8.89							
D2	12.85	12.20	13.30							
E	10.18	10.11	10.40							