

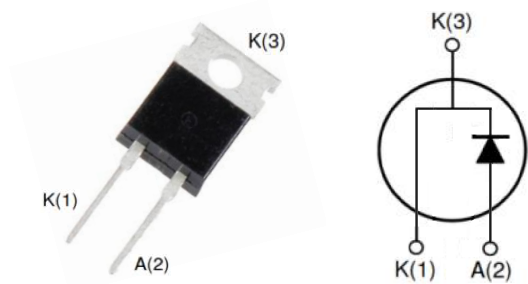
Features

- Ease of Paralleling
- Zero reverse recovery current
- Zero forward recovery voltage
- Temperature independent switching behaviour
- High temperature operation
- High frequency operation

Key Characteristics		
V_{RRM}	1200	V
$I_F, T_c \leq 160^\circ\text{C}$	5	A
Q_c	36	nC

Benefits

- Unipolar rectifier
- Substantially reduced switching losses
- No thermal run-away with parallel devices
- Reduced heat sink requirements



Applications

- Switch Mode Power Supplies (SMPS)
- Boost diodes in PFC or DC/DC stages
- Motor drives
- Solar application, UPS
- Power Switching Circuits

Part No.	Package Type	Marking
ASD5120A	TO-220-2	ASD5120A

Maximum Ratings

Parameter	Symbol	Test Condition	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}		1200	V
Surge Peak Reverse Voltage	V_{RSM}		1200	V
DC Blocking Voltage	V_{DC}		1200	V
Continuous Forward Current	I_F	$T_C=25^{\circ}C$	22	A
		$T_C=125^{\circ}C$	12	
		$T_C=160^{\circ}C$	5	
Repetitive Peak Forward Surge Current	I_{FRM}	$T_C=25^{\circ}C$, $t_p=10ms$, Half Sine Wave, $D=0.3$	25	A
Non-repetitive Peak Forward Surge Current	I_{FSM}	$T_C=25^{\circ}C$, $t_p=10ms$, Half Sine Wave	100	A
Power Dissipation	P_{TOT}	$T_C=25^{\circ}C$	129	W
		$T_C=110^{\circ}C$	56	W
Operating Junction	T_j		-55 $^{\circ}C$ to 175 $^{\circ}C$	$^{\circ}C$
Storage Temperature	T_{stg}		-55 $^{\circ}C$ to 175 $^{\circ}C$	$^{\circ}C$
Mounting Torque		M3 Screw	1	Nm lbf-in
		6-32 Screw	8.8	

Thermal Characteristics

Parameter	Symbol	Test Condition	Value	Unit
			Typ.	
Thermal resistance from junction to case	R_{thJC}		1.16	$^{\circ}C/W$

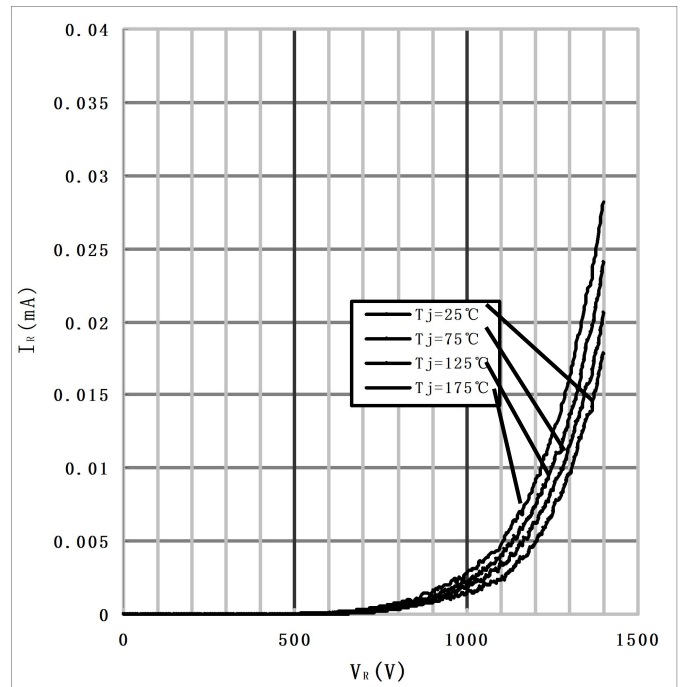
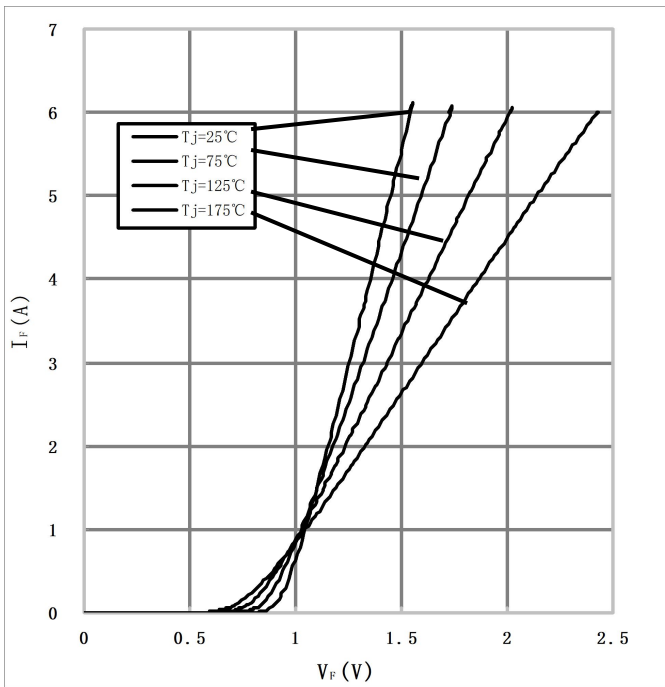
Electrical Characteristics

Parameter	Symbol	Test Conditions	Numerical		Unit
			Typ.	Max.	
Forward Voltage	V _F	I _F =5A, T _j =25°C	1.42	1.7	V
		I _F =5A, T _j =175°C	2	2.5	
Reverse Current	I _R	V _R =1200V, T _j =25°C	10	50	μA
		V _R =1200V, T _j =175°C	20	100	
Total Capacitive Charge	Q _C	V _R =800V, T _j =150°C $Q_C = \int_0^{V_R} C(V)dV$	36	-	nC
Total Capacitance	C	V _R =0V, T _j =25°C, f=1MHZ	475	510	pF
		V _R =400V, T _j =25°C, f=1MHZ	34	44	
		V _R =800V, T _j =25°C, f=1MHZ	33	40	

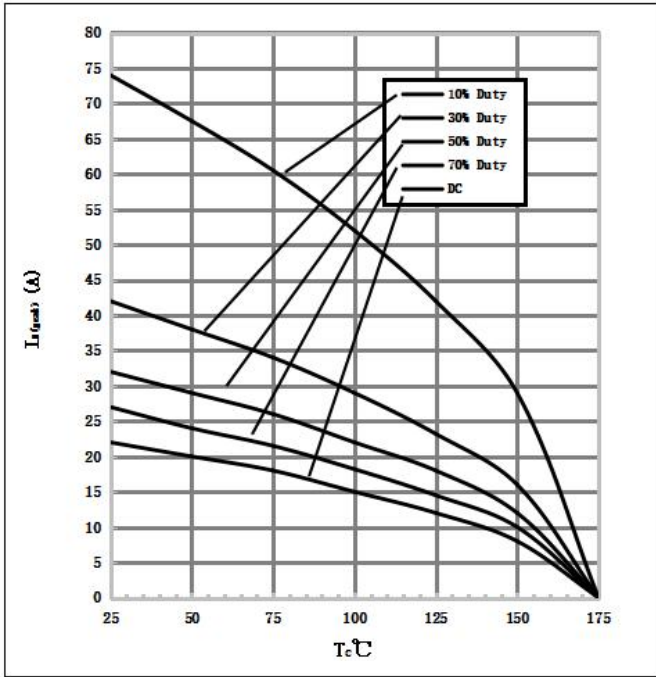
Performance Graphs

1) Forward IV characteristics as a function of T_j :

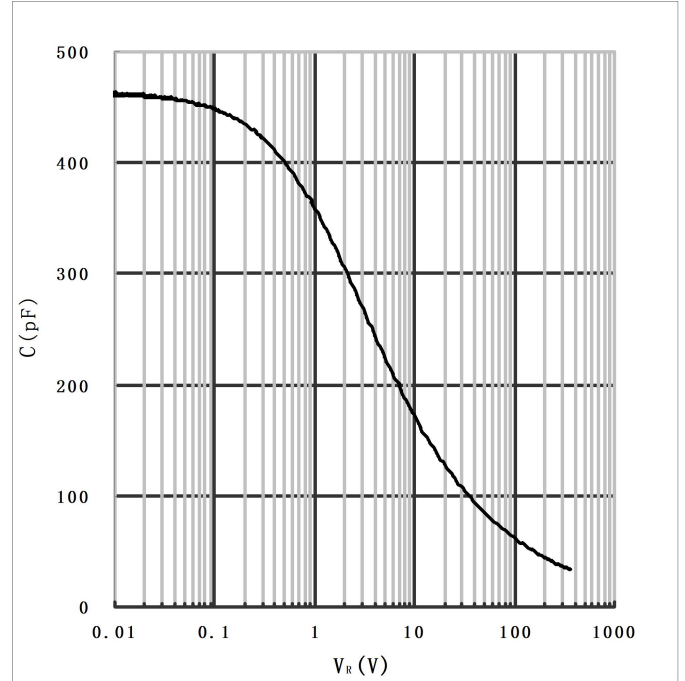
2) Reverse IV characteristics as a function of T_j :



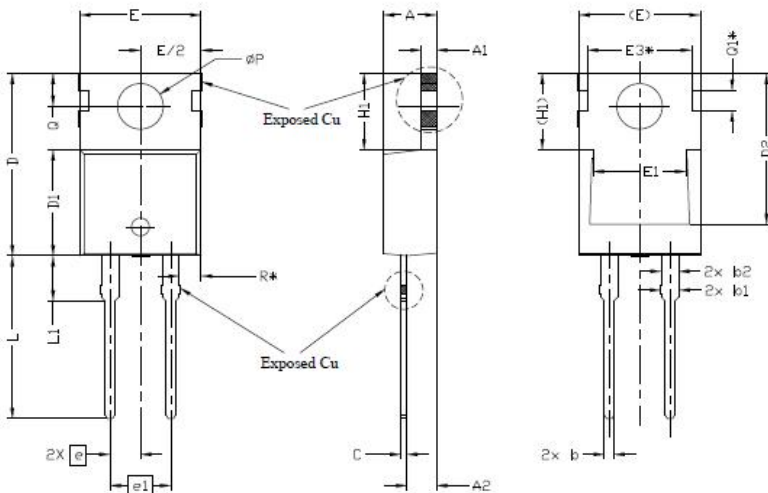
3) Current Derating



4) Capacitance vs. reverse voltage :



Package TO-220-2



SYMBOL	DIMENSIONS			NOTES
	MIN.	NOM.	MAX.	
A	4.24	4.44	4.64	
A1	1.15	1.27	1.40	
A2	2.30	2.48	2.70	
b	0.70	0.80	0.90	
b1	1.20	1.55	1.75	
b2	1.20	1.45	1.70	
c	0.40	0.50	0.60	
D	14.70	15.37	16.00	4
D1	8.82	8.92	9.02	
D2	12.63	12.73	12.83	5
E	9.96	10.16	10.36	4,5
E1	6.86	7.77	8.89	5
E3*	8.70REF.			
e	2.54BSC			
e1	5.08BSC			
H1	6.30	6.45	6.60	5,6
L	13.47	13.72	13.97	
L1	3.60	3.80	4.00	
QP	3.75	3.84	3.93	
Q	2.60	2.80	3.00	
Q1*	1.73REF.			
R*	1.82REF.			

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