

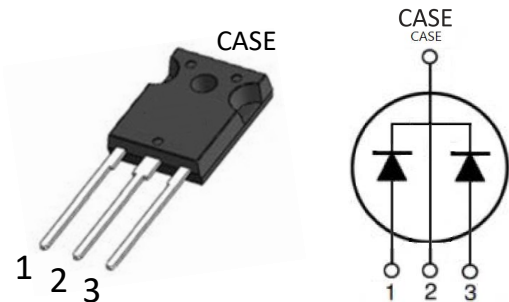
### Features

- 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
$I_F, T_c \leq 155^\circ\text{C}$	30**	A
$Q_c$	168**	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
ASD30120P2	TO-247-3	ASD30120P2

\* Per Leg, \*\* Per Device

**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	$I_F$	$T_C=25^{\circ}C$ $T_C=125^{\circ}C$ $T_C=155^{\circ}C$	55*/110** 30*/60** 15*/30**	A
Repetitive Peak Forward Surge Current	$I_{FRM}$	$T_C=25^{\circ}C$ , $t_p=10ms$ , Half Sine Wave, $D=0.3$	75*/150**	A
Non-repetitive Peak Forward Surge Current	$I_{FSM}$	$T_C=25^{\circ}C$ , $t_p=10ms$ , Half Sine Wave	204*/408**	A
Power Dissipation	$P_{TOT}$	$T_C=25^{\circ}C$	263*	W
		$T_C=110^{\circ}C$	114*	W
Operating Junction	$T_j$		-55°C to 175°C	°C
Storage Temperature	$T_{stg}$		-55°C to 175°C	°C
Mounting Torque		M3 Screw	1	Nm
		6-32 Screw	8.8	lbf-in

**Thermal Characteristics**

Parameter	Symbol	Test Condition	Value	Unit
			Typ.	
Thermal resistance from junction to case	$R_{thJC}$		0.57*/0.28**	°C/W

\* Per Leg, \*\* Per Device



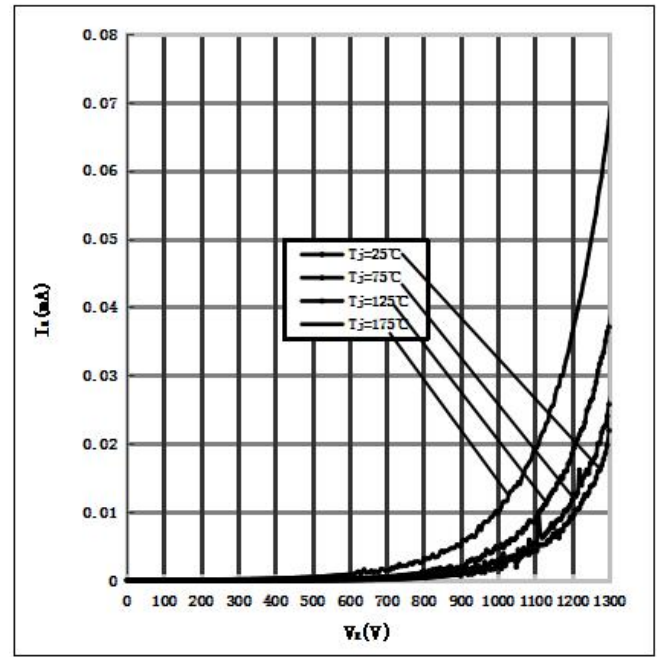
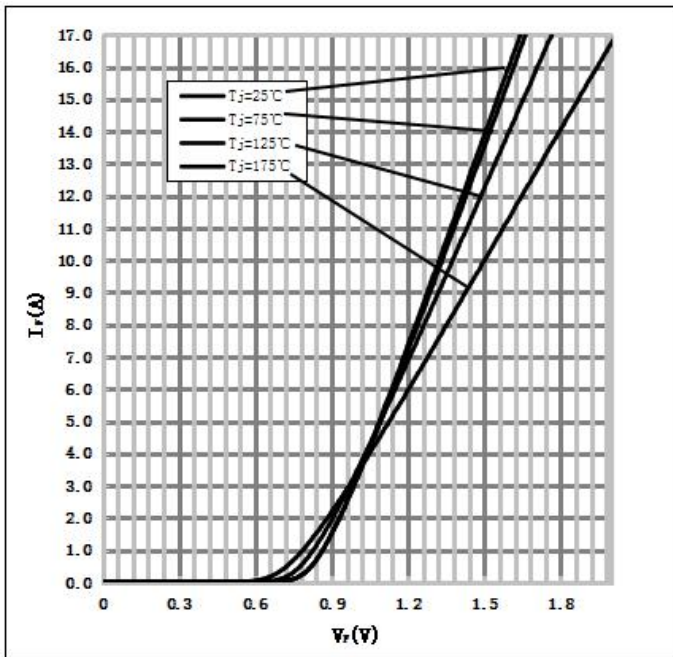
**Electrical Characteristics (Per Leg)**

Parameter	Symbol	Test Conditions	Numerical		Unit
			Typ.	Max.	
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =15A, T <sub>j</sub> =25°C	1.4	1.7	V
		I <sub>F</sub> =15A, T <sub>j</sub> =175°C	2	2.5	
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =1200V, T <sub>j</sub> =25°C	10	50	μA
		V <sub>R</sub> =1200V, T <sub>j</sub> =175°C	20	100	
Total Capacitive Charge	Q <sub>C</sub>	V <sub>R</sub> =800V, T <sub>j</sub> =150°C $Q_C = \int_0^{V_R} C(V)dV$	84	-	nC
Total Capacitance	C	V <sub>R</sub> =0V, T <sub>j</sub> =25°C, f=1MHZ	1370	1420	pF
		V <sub>R</sub> =400V, T <sub>j</sub> =25°C, f=1MHZ	73	78	
		V <sub>R</sub> =800V, T <sub>j</sub> =25°C, f=1MHZ	61	63	

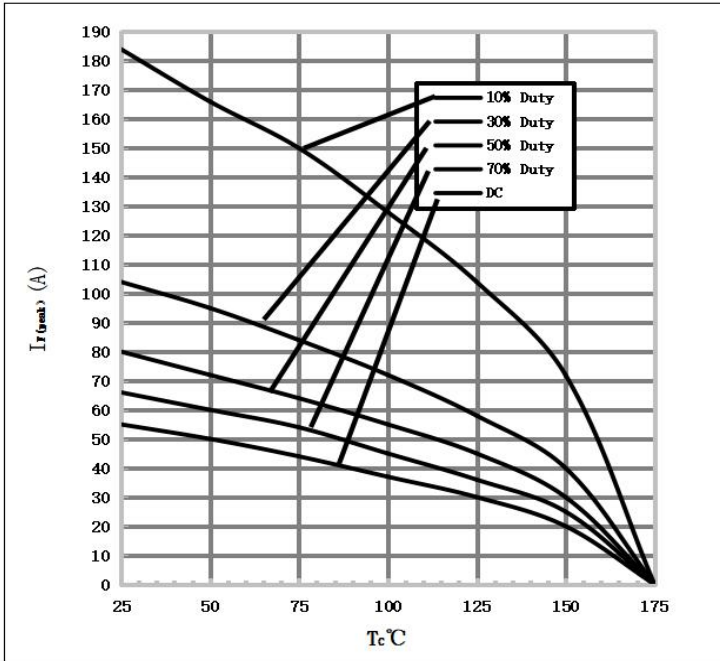
**Performance Graphs (Per Leg)**

1) Forward IV characteristics as a function of T<sub>j</sub> :

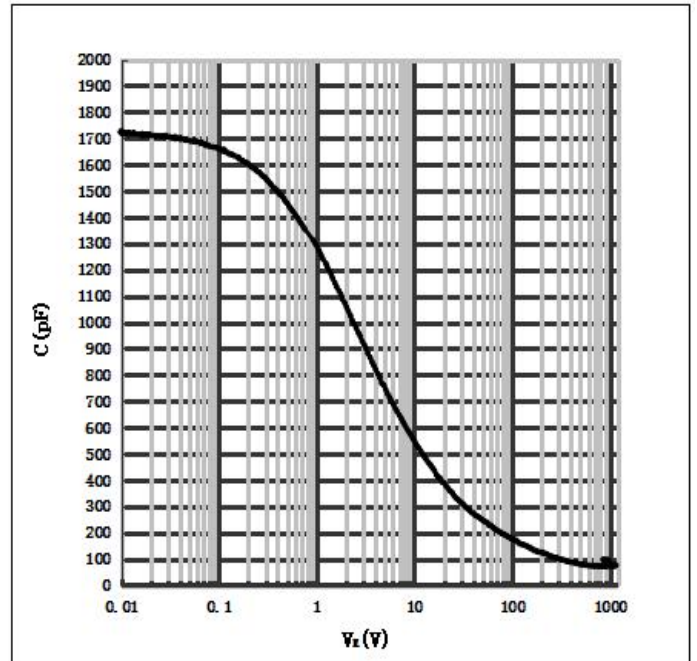
2) Reverse IV characteristics as a function of T<sub>j</sub> :



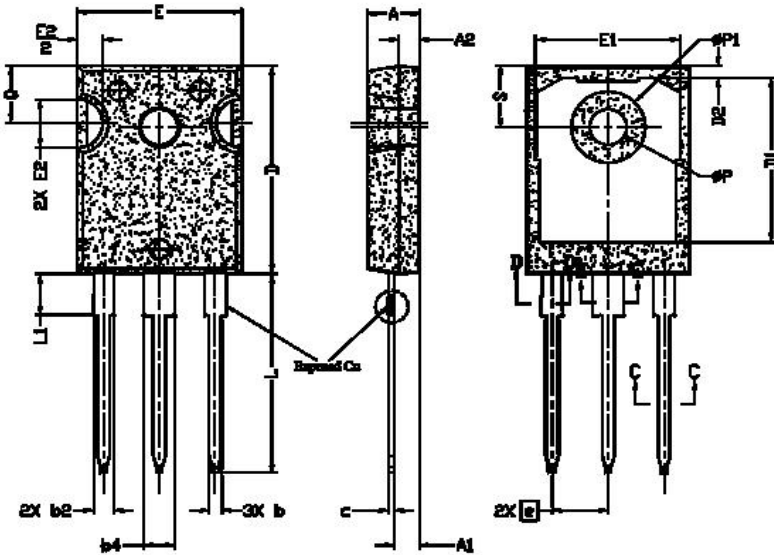
3) Current Derating



4) Capacitance vs. reverse voltage :



Package TO-247-3



SYMBOL	DIMENSIONS			NOTES
	MIN	NOM	MAX	
A	4.83	5.02	5.21	
A1	2.29	2.41	2.55	
A2	1.50	2.00	2.49	
b	1.12	1.20	1.33	
b1	1.12	1.20	1.28	
b2	1.91	2.00	2.39	6
b3	1.91	2.00	2.34	
b4	2.87	3.00	3.22	6, 8
b5	2.87	3.00	3.18	
c	0.55	0.60	0.69	6
c1	0.55	6.00	0.65	
D	20.80	20.95	21.10	4
D1	16.25	16.55	17.65	5
D2	0.51	1.19	1.35	
E	15.75	15.94	16.13	4
E1	13.46	14.02	14.16	5
E2	4.32	4.91	5.49	3
e	5.44 BSC			
L	19.81	20.07	20.32	
L1	4.10	4.19	4.40	6
ΦP	3.56	3.61	3.65	7
ΦP1	7.19 REF			
Q	5.39	5.79	6.20	
S	6.04	6.17	6.30	

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