

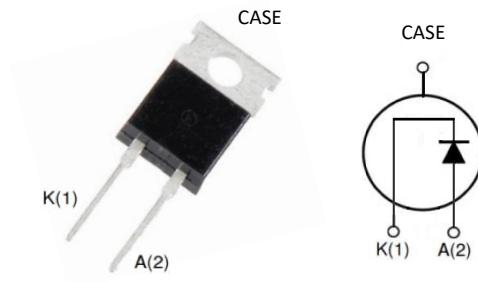
### Features

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

Key Characteristics		
$V_{RRM}$	650	V
$I_F, T_c \leq 150^\circ\text{C}$	10	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
ASD1065I	Isolated TO-220-2	ASD1065I

**Maximum Ratings**

Parameter	Symbol	Test Condition	Value	Unit
Repetitive Peak Reverse Voltage	$V_{RRM}$		650	V
Surge Peak Reverse Voltage	$V_{RSM}$		650	V
DC Blocking Voltage	$V_{DC}$		650	V
Continuous Forward Current	$I_F$	$T_C=25^{\circ}C$	30	A
		$T_C=135^{\circ}C$	14	
		$T_C=150^{\circ}C$	10	
Repetitive Peak Forward Surge Current	$I_{FRM}$	$T_C=25^{\circ}C$ , $t_p=10ms$ , Half Sine Wave, $D=0.3$	50	A
Non-repetitive Peak Forward Surge Current	$I_{FSM}$	$T_C=25^{\circ}C$ , $t_p=10ms$ , Half Sine Wave	100	A
Power Dissipation	$P_{TOT}$	$T_C=25^{\circ}C$	90.4	W
		$T_C=110^{\circ}C$	39.2	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
		6-32 Screw	8.8	lbf-in

**Thermal Characteristics**

Parameter	Symbol	Test Condition	Value	Unit
			Typ.	
Thermal resistance from junction to case	$R_{thJC}$		1.66	$^{\circ}C/W$

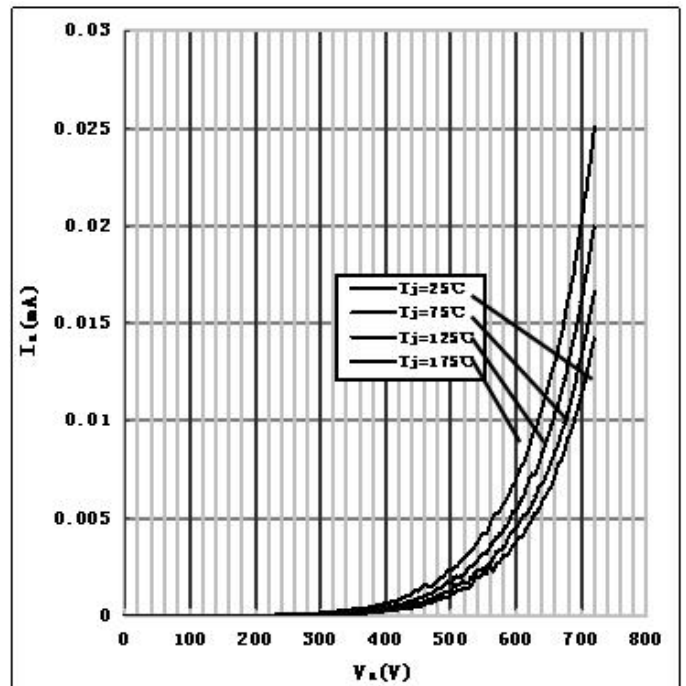
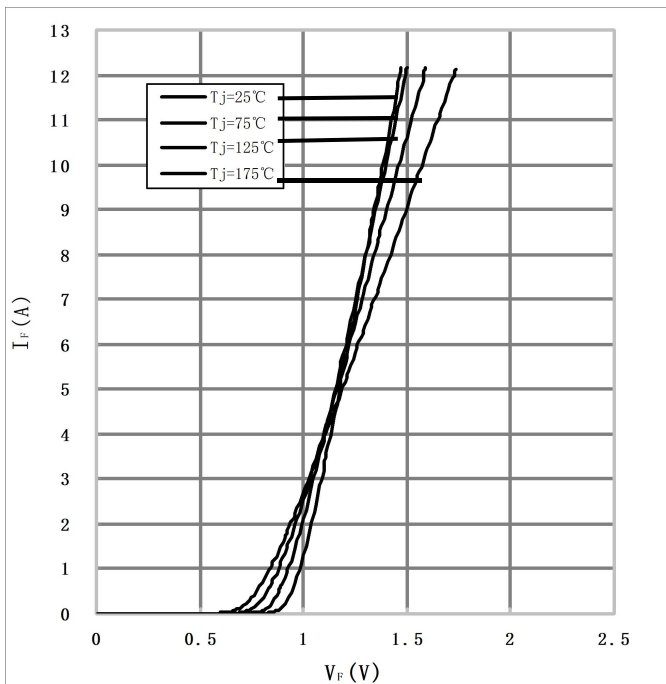
**Electrical Characteristics**

Parameter	Symbol	Test Conditions	Numerical		Unit
			Typ.	Max.	
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =10A, T <sub>j</sub> =25°C	1.45	1.7	V
		I <sub>F</sub> =10A, T <sub>j</sub> =175°C	1.7	2.5	
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =650V, T <sub>j</sub> =25°C	10	50	μA
		V <sub>R</sub> =650V, T <sub>j</sub> =175°C	20	100	
Total Capacitive Charge	Q <sub>C</sub>	V <sub>R</sub> =400V, T <sub>j</sub> =150°C $Q_C = \int_0^{V_R} C(V)dV$	36	-	nC
Total Capacitance	C	V <sub>R</sub> =0V, T <sub>j</sub> =25°C, f=1MHZ	690	730	pF
		V <sub>R</sub> =200V, T <sub>j</sub> =25°C, f=1MHZ	72	75	
		V <sub>R</sub> =400V, T <sub>j</sub> =25°C, f=1MHZ	71	74	

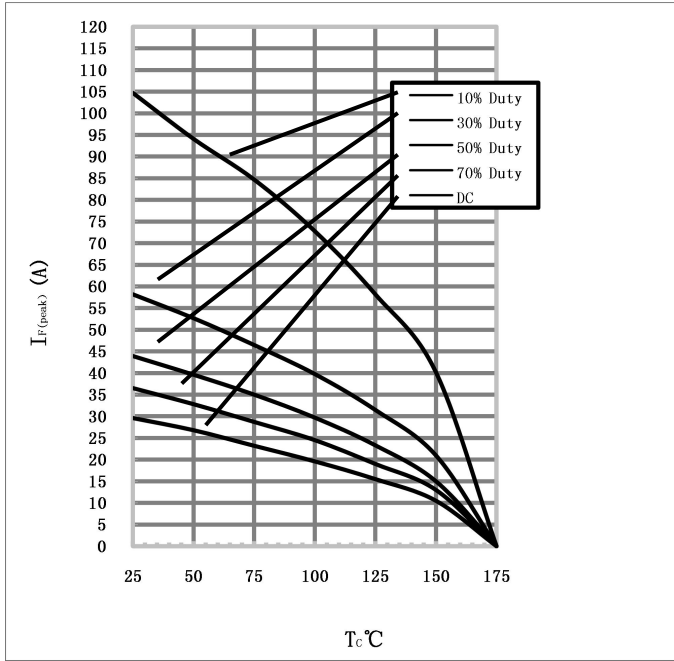
**Performance Graphs**

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

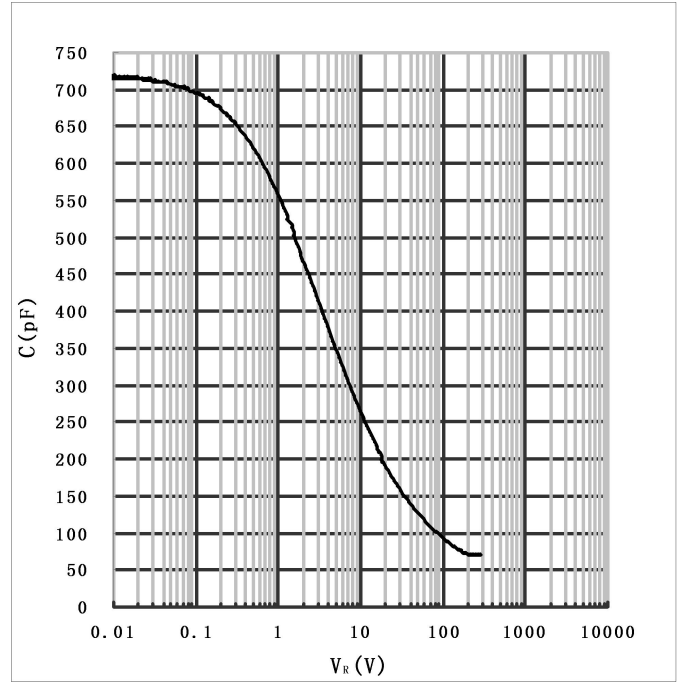
2) Reverse IV characteristics as a function of T<sub>j</sub> :



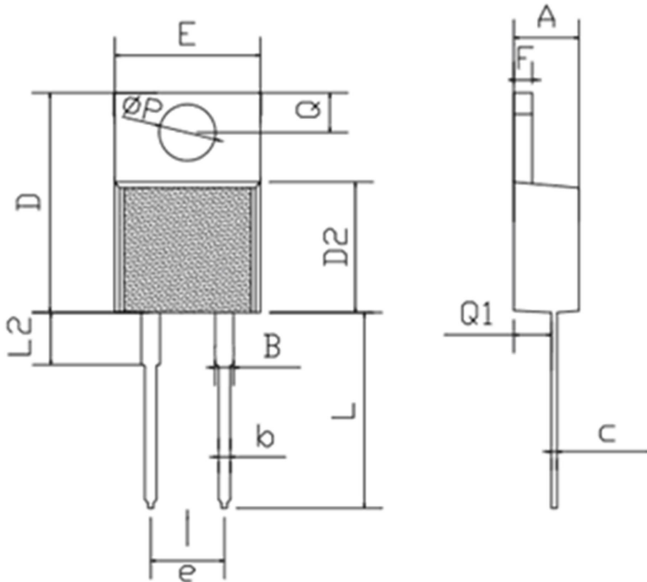
3) Current Derating



4) Capacitance vs. reverse voltage :



**Package TO-220-2**



DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.40	4.80	0.173	0.189
B	1.10	1.40	0.043	0.055
b	0.70	0.90	0.028	0.035
c	0.28	0.48	0.011	0.019
D	14.50	15.50	0.571	0.610
D2	8.20	9.20	0.323	0.362
E	9.70	10.40	0.382	0.409
e	5.01	5.12	0.197	0.202
F	1.20	1.35	0.047	0.053
L	13.00	14.00	0.512	0.551
L2	3.60	3.80	0.142	0.150
Q	2.50	3.00	0.098	0.118
Q1	2.20	2.90	0.087	0.114
P	3.60	4.00	0.142	0.157

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