

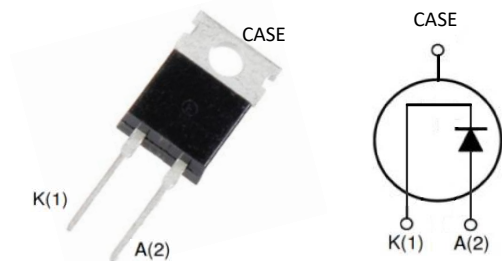
Features

- 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
$I_F, T_c \leq 150^\circ\text{C}$	8	A
Q_c	30	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
ASD865I	Isolated TO-220-2	ASD865I

Maximum Ratings

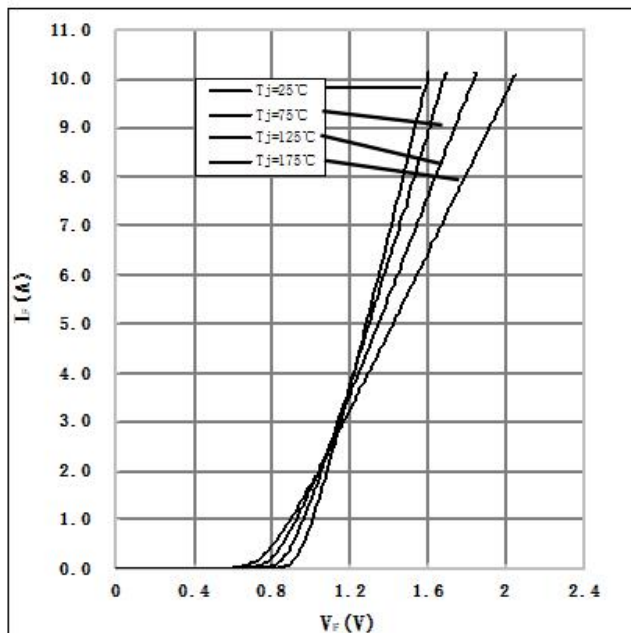
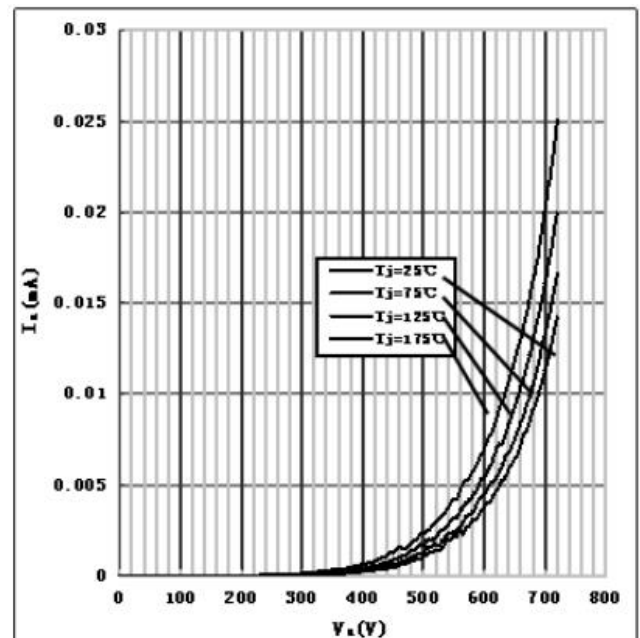
Parameter	Symbol	Test Condition	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}		650	V
Surge Peak Reverse Voltage	V_{RSM}		650	V
DC Blocking Voltage	V_{DC}		650	V
Continuous Forward Current	I_F	$T_C=25^{\circ}\text{C}$ $T_C=135^{\circ}\text{C}$ $T_C=150^{\circ}\text{C}$	23 11 8	A
Repetitive Peak Forward Surge Current	I_{FRM}	$T_C=25^{\circ}\text{C}$, $t_p=10\text{ms}$, Half Sine Wave, $D=0.3$	50	A
Non-repetitive Peak Forward Surge Current	I_{FSM}	$T_C=25^{\circ}\text{C}$, $t_p=10\text{ms}$, Half Sine Wave	100	A
Power Dissipation	P_{TOT}	$T_C=25^{\circ}\text{C}$	84.7	W
		$T_C=110^{\circ}\text{C}$	36.7	W
Operating Junction	T_j		-55°C to 175°C	$^{\circ}\text{C}$
Storage Temperature	T_{stg}		-55°C to 175°C	$^{\circ}\text{C}$
Mounting Torque		M3 Screw	1	Nm
		6-32 Screw	8.8	lbf-in

Thermal Characteristics

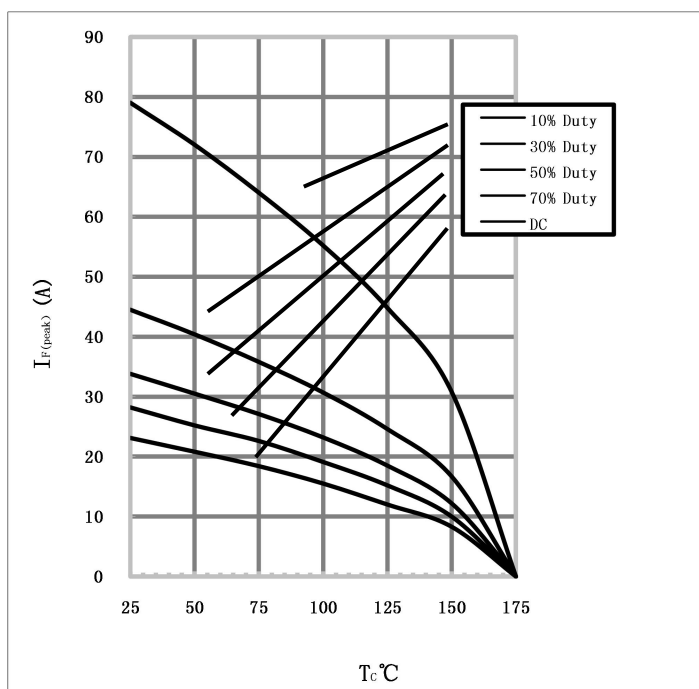
Parameter	Symbol	Test Condition	Value	Unit
			Typ.	
Thermal resistance from junction to case	R_{thJC}		1.77	$^{\circ}\text{C}/\text{W}$

Electrical Characteristics

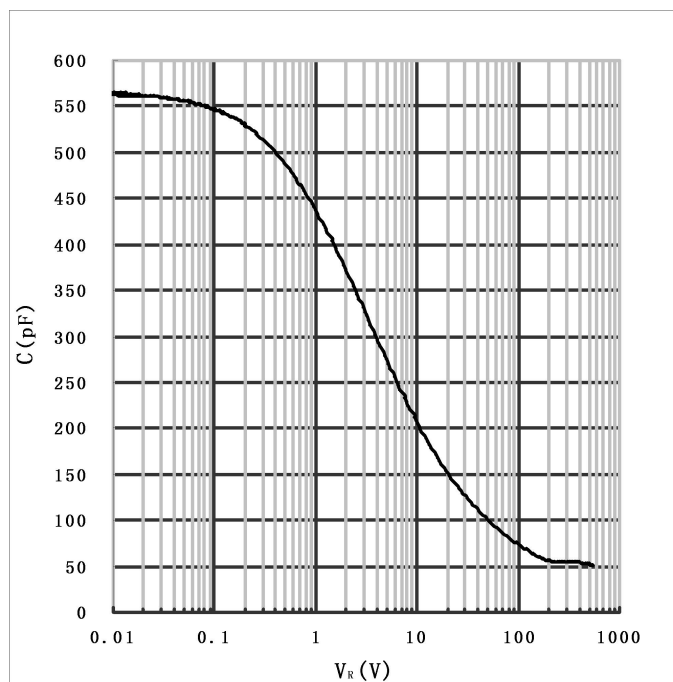
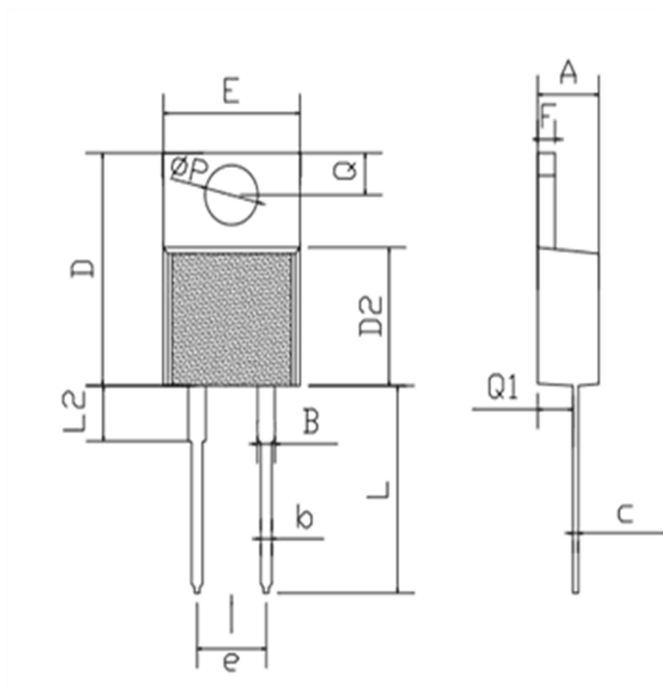
Parameter	Symbol	Test Conditions	Numerical		Unit
			Typ.	Max.	
Forward Voltage	V_F	$I_F=8A, T_j=25^{\circ}C$	1.45	1.7	V
		$I_F=8A, T_j=175^{\circ}C$	1.75	2.5	
Reverse Current	I_R	$V_R=650V, T_j=25^{\circ}C$	10	50	μA
		$V_R=650V, T_j=175^{\circ}C$	20	100	
Total Capacitive Charge	Q_C	$V_R=400V, T_j=150^{\circ}C$ $Q_C = \int_0^{V_R} C(V)dV$	30	-	nC
Total Capacitance	C	$V_R=0V, T_j=25^{\circ}C, f=1MHz$	550	588	pF
		$V_R=200V, T_j=25^{\circ}C, f=1MHz$	56.5	57	
		$V_R=400V, T_j=25^{\circ}C, f=1MHz$	54	54.5	

Performance Graphs1) 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

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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