

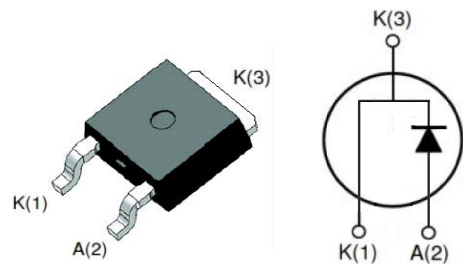
Features

- 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
$I_F, T_c \leq 155^\circ\text{C}$	4	A
Q_c	9	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
ASD465D	TO-252-2	ASD465D

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	$T_C=25^{\circ}C$ $T_C=135^{\circ}C$ $T_C=155^{\circ}C$	13 6 4	A
Repetitive Peak Forward Surge Current	I_{FRM}	$T_C=25^{\circ}C$, $t_p=10ms$, Half Sine Wave, $D=0.3$	15	A
Non-repetitive Peak Forward Surge Current	I_{FSM}	$T_C=25^{\circ}C$, $t_p=10ms$, Half Sine Wave	35	A
Power Dissipation	P_{TOT}	$T_C=25^{\circ}C$	51	W
		$T_C=110^{\circ}C$	21	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}		2.9	$^{\circ}C/W$



Electrical Characteristics

Parameter	Symbol	Test Conditions	Numerical		Unit
			Typ.	Max.	
Forward Voltage	V_F	$I_F=4A, T_j=25^{\circ}C$	1.4	1.65	V
		$I_F=4A, T_j=175^{\circ}C$	1.7	2.3	
Reverse Current	I_R	$V_R=650V, T_j=25^{\circ}C$	1	10	μA
		$V_R=650V, T_j=175^{\circ}C$	5	100	
Total Capacitive Charge	Q_C	$V_R=400V, T_j=150^{\circ}C$ $Q_C = \int_0^{V_R} C(V)dV$	9	-	nC
Total Capacitance	C	$V_R=0V, T_j=25^{\circ}C, f=1MHZ$	230	150	pF
		$V_R=200V, T_j=25^{\circ}C, f=1MHZ$	24	25	
		$V_R=400V, T_j=25^{\circ}C, f=1MHZ$	20	21	

Performance Graphs

1) Forward IV characteristics as a function of Tj :

2) Reverse IV characteristics as a function of Tj :

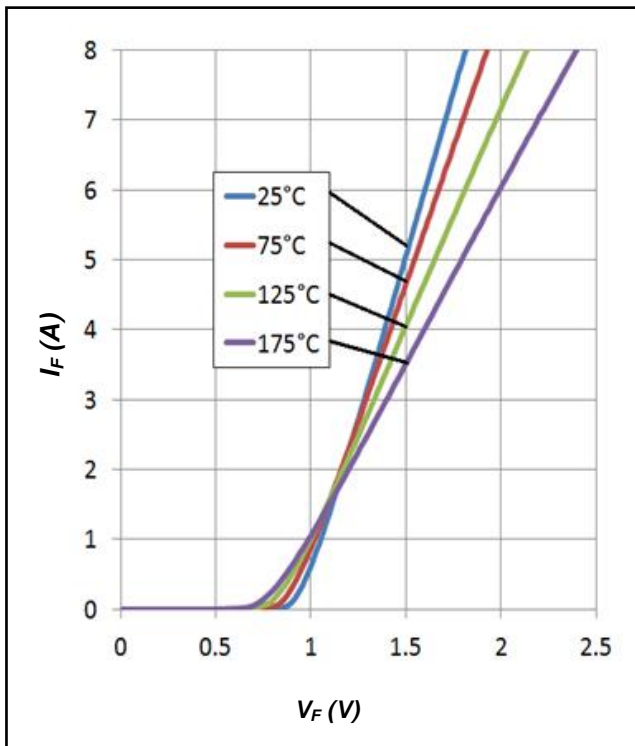


Figure 1. Forward Characteristics

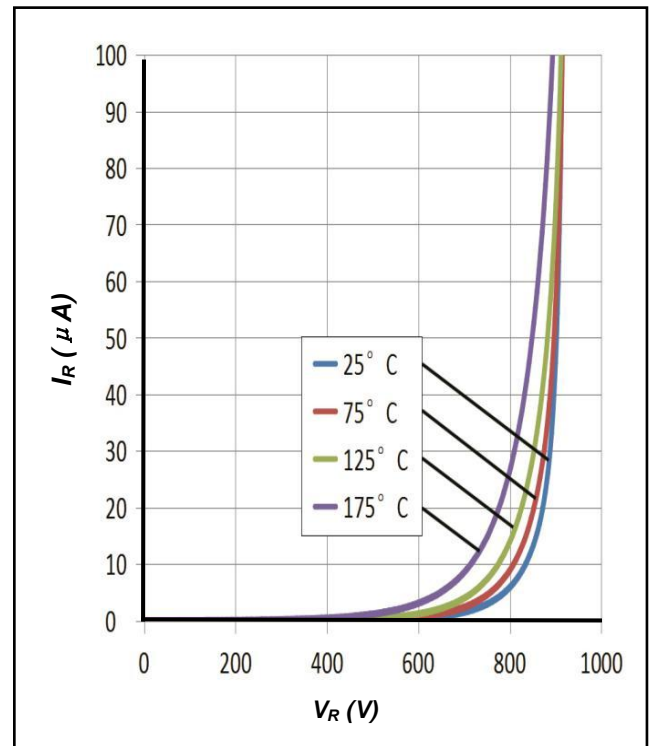


Figure 2. Reverse Characteristics

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