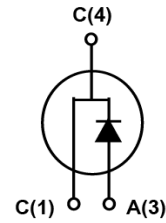




D-PAK



Features

- Rated to 650V at 5 Amps
- Zero reverse recovery current
- Zero forward recovery voltage
- Temperature independent switching behaviour
- High temperature operation
- High frequency operation
- Marking : ESIC05065SD

Benefits

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

Application

- SMPS, e.g., CCM PFC
- Motor drives, Solar application, UPS, Wind turbine, Rail traction, EV/HEV

Absolute Maximum Ratings (TA=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Limit	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	$T_j=25^\circ\text{C}$	650	V
Surge Peak Reverse Voltage	V_{RSM}	$T_j=25^\circ\text{C}$	650	V
DC Blocking Voltage	V_{DC}	$T_j=25^\circ\text{C}$	650	V
Continuous Forward Current	I_F	$T_j=25^\circ\text{C}$ $T_j=135^\circ\text{C}$ $T_j=160^\circ\text{C}$	21.5 10 5	A
Repetitive Peak Forward Surge Current	I_{FRM}	$T_c=25^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Wave, $D=0.3$	30	A
Non-Repetitive Peak Forward Surge Current	I_{FSM}	$T_c=25^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Wave	60	A
Power Dissipation	P_{TOT}	$T_c=25^\circ\text{C}$ $T_c=110^\circ\text{C}$	85.8 37.2	W
Operating Junction and Storage Temperature	$T_j \cdot T_{stg}$		-55~+175	°C
Typical Thermal Resistance from Junction to Case	$R_{\theta JC}$		1.748	°C/W

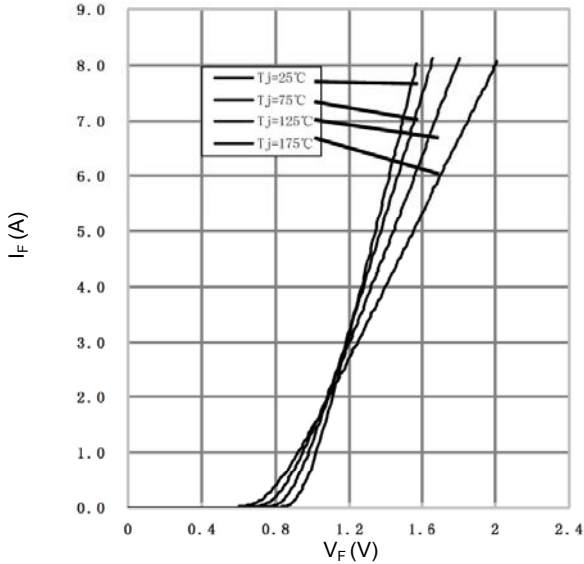


Electrical Characteristics (TA = 25 °C unless otherwise specified)

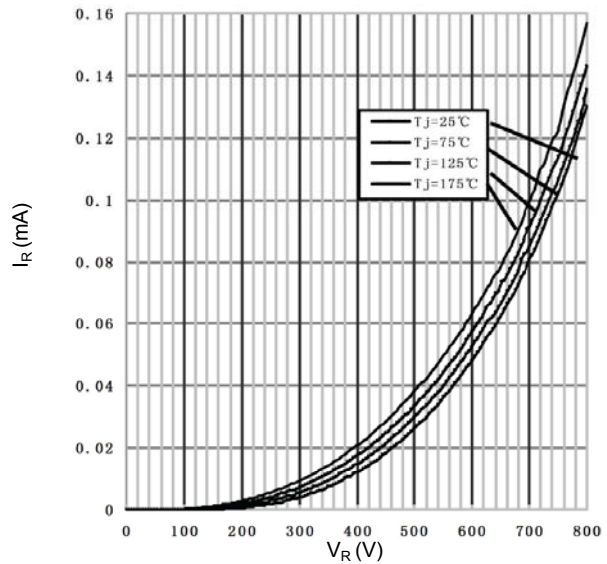
Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Forward Voltage	$I_F=5A, T_J=25^{\circ}C$	V_F	-	1.35	1.8	V
	$I_F=5A, T_J=175^{\circ}C$		-	1.55	2.5	
Reverse Current	$V_R=650V, T_J=25^{\circ}C$	I_R	-	-	100	μA
	$V_R=650V, T_J=175^{\circ}C$		-	-	200	
Total Capacitive Charge	$V_R=400V, T_J=150^{\circ}C$ $Q_C = \int_0^{V_R} C(V) dV$	Q_C	-	23	-	nC
Total Capacitive Charge	$V_R=0V, T_J=25^{\circ}C, f=1MHz$	C	-	424	434	pF
	$V_R=200V, T_J=25^{\circ}C, f=1MHz$		-	44	45	
	$V_R=400V, T_J=25^{\circ}C, f=1MHz$		-	42.5	43	

Rating and Characteristics Curves

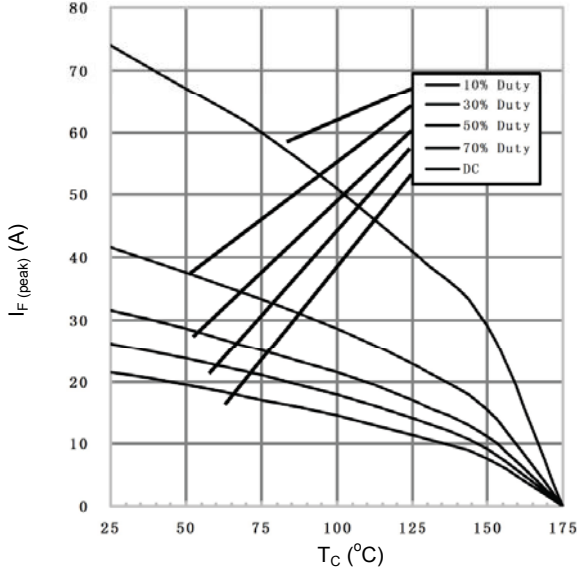
1) Forward IV characteristics as a function of Tj :



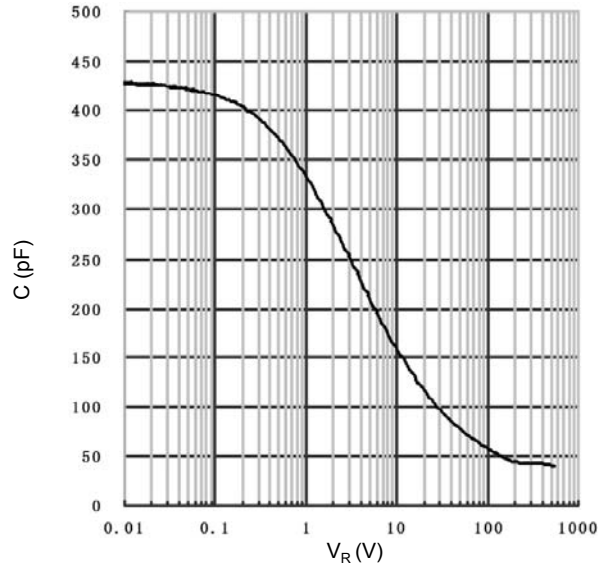
2) Reverse IV characteristics as a function of Tj :



3) Current Derating (10% · 30% · 50% · 70% · DC)

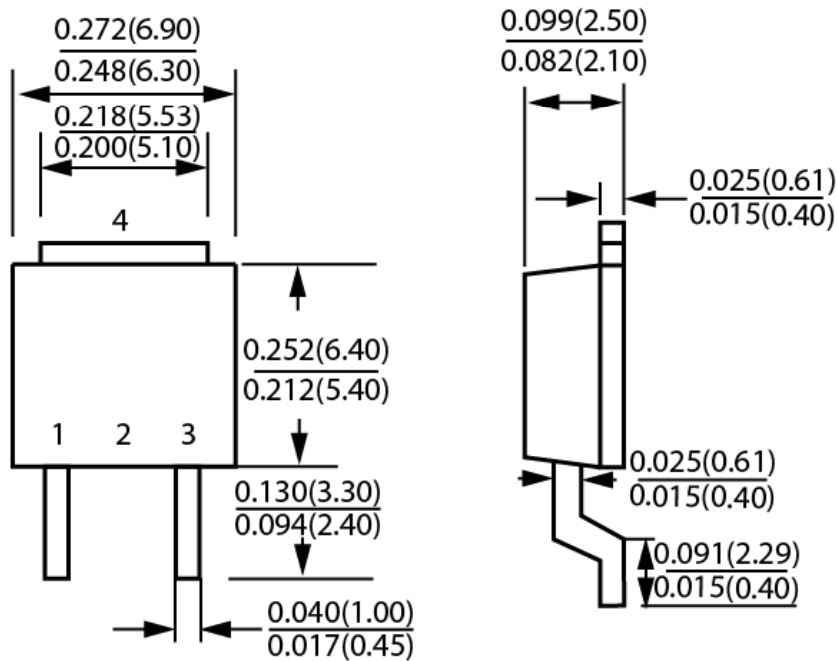
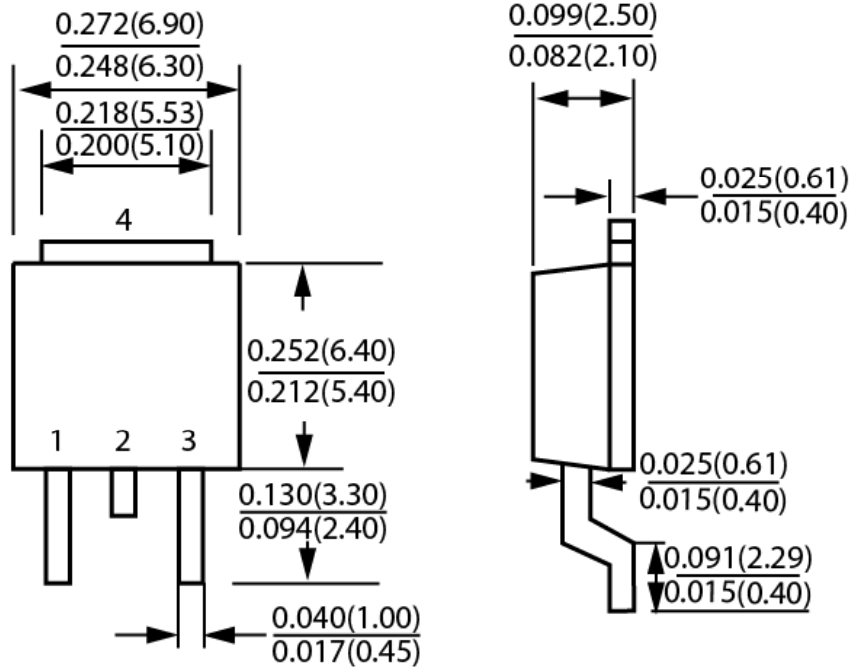


4) Capacitance vs. reverse voltage :





Package Outline Dimensions



D-PAK

Dimensions in inches and (millimeters)



LEGAL DISCLAIMER

- The product is provided “AS IS” without any guarantees or warranty. In association with the product, Eris Technology Corporation, its affiliates, and their directors, officers, employees, agents, successors and assigns (collectively, the “Eris”) makes no warranties of any kind, either express or implied, including but not limited to warranties of merchantability, fitness for a particular purpose, of title, or of non-infringement of third party rights.
- The information in this document and any product described herein are subject to change without notice and should not be construed as a commitment by Eris. Eris assumes no responsibility for any errors that may appear in this document.
- Eris does not assume any liability arising out of the application or use of this document or any product described herein, any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Eris and all the companies whose products are represented on Eris website, harmless against all damages.
- No license, express or implied, by estoppels or otherwise, to any intellectual property is granted by this document or by any conduct of Eris. Product name and markings notes herein may be trademarks of their respective owners.
- Eris does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel.
- Should Customers purchase or use Eris products for any unintended or unauthorized application, Customers shall indemnify and hold Eris and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.
- The official text is written in English and the English version of this document is the only version endorsed by Eris. Any discrepancies or differences created in the translations are not binding and have no legal effect on Eris for compliance or enforcement purposes.