Product Summary

V_{RRM}	I_F (T_C=150℃)	Q_c
650V	7A	32nC

Feature

- Negligible reverse recovery
- High-speed switching
- Positive Temperature Coefficient
- Temperature-Independent Switching

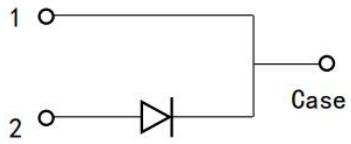
Applications

- Switch mode power supply
- Solar inverter
- Data Center
- Uninterruptible power supply

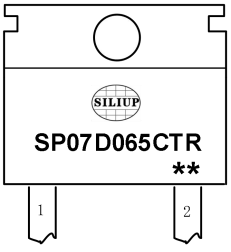
Package

TO-220-2L

Circuit diagram



Marking



SP07D065CTR :Device Code
** :Week Code

Order Information

Device	Package	Unit/Tube
SP07D065CTR	TO-220-2L	50

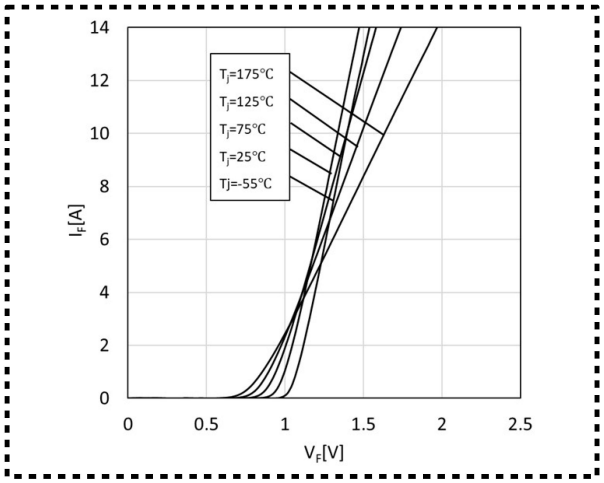
Absolute maximum ratings (Tc=25℃,unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{RRM}	650	V
Continuous forward current (T_C=150℃)	I_F	7	A
Non-repetitive forward surge current	I_{FSM}	90	A
Power Dissipation(T_C=25℃)	P_D	79	W
Power Dissipation(T_C=110℃)		34	
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	1.89	℃/W
Storage Temperature Range	T_{STG}	-55 to 175	℃
Operating Junction Temperature Range	T_J	-55 to 175	℃

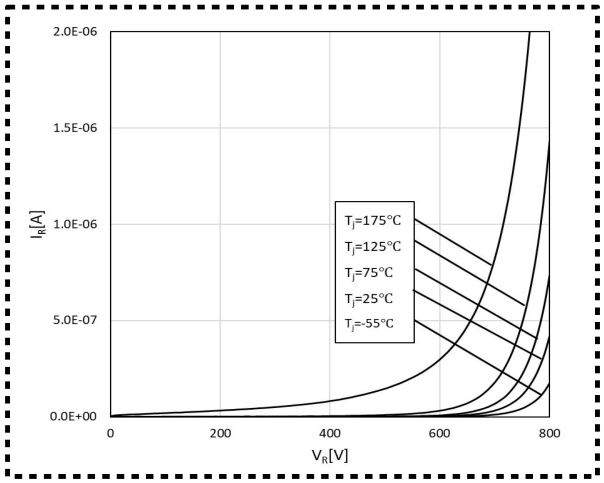
Electrical characteristics (Ta=25℃, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
DC blocking voltage	V_{DC}		650	-	-	V
Forward voltage	V_F	I_F=7A, Tc=25℃	-	1.38	1.65	V
		I_F=7A, Tc=175℃	-	1.81	-	
Reverse current	I_R	V_R=650V, Tc=25℃	-	1	15	uA
		V_R=650V, Tc=175℃	-	2	-	
Total capacitive charge	Q_C	V_R=400V, Tj=25℃	-	32	-	nC
Total capacitance	C	V_R=0V, f=1MHZ	-	620	-	pF
		V_R=400V, f=1MHZ	-	51	-	

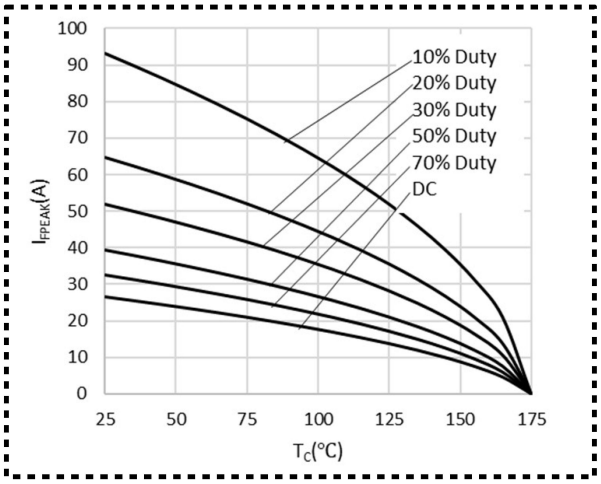
Typical Characteristics



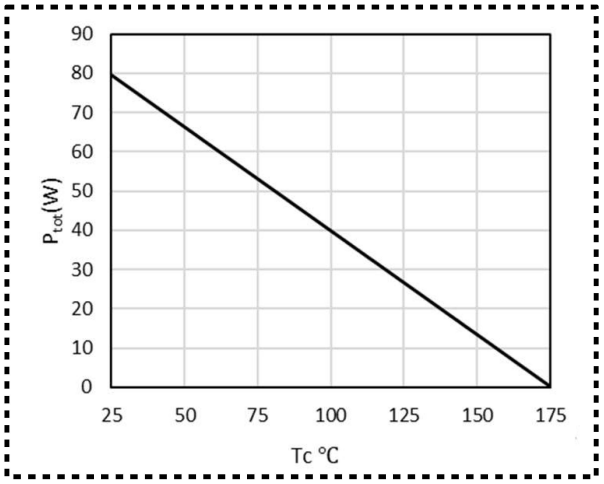
Forward Characteristics



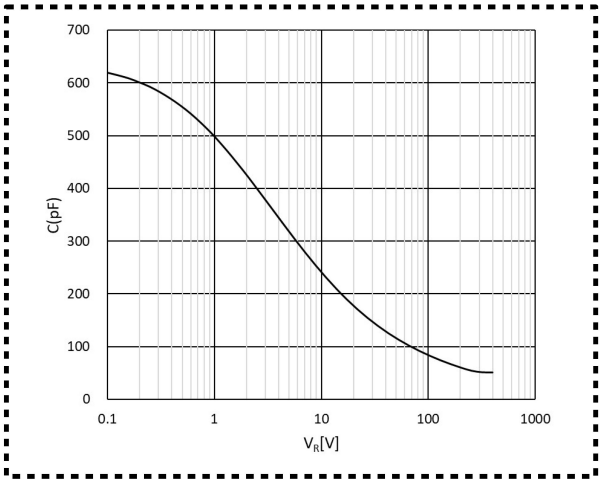
Reverse Characteristics



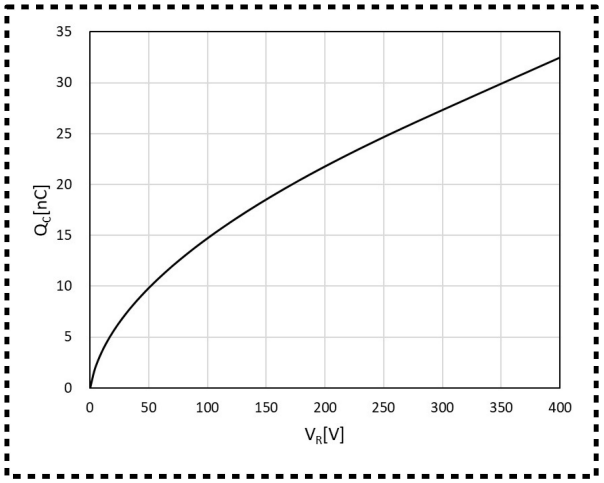
Current Derating



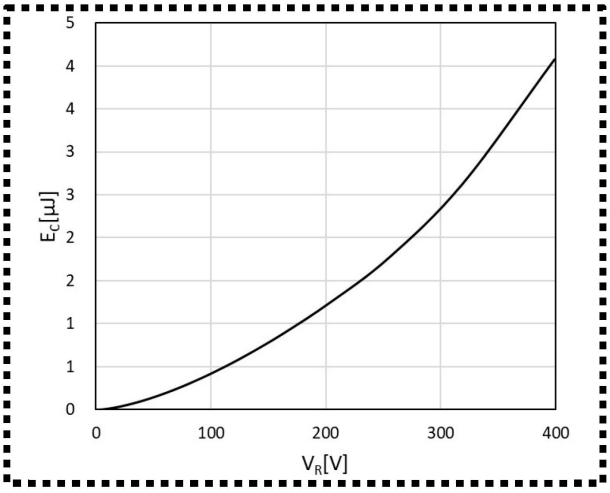
Power Derating



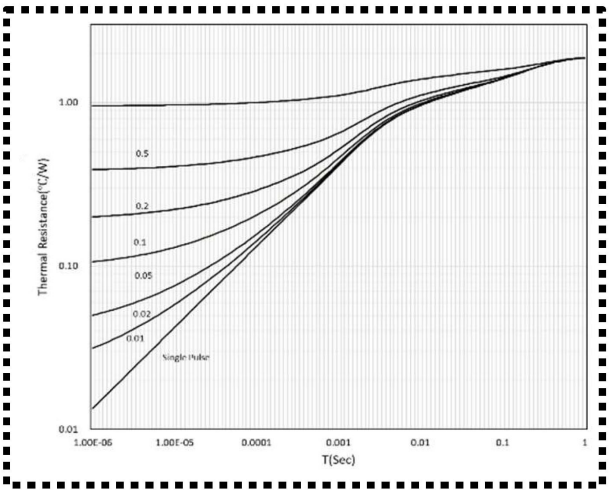
Capacitance vs.Reverse Voltage



Reverse Charge vs.Reverse Voltage

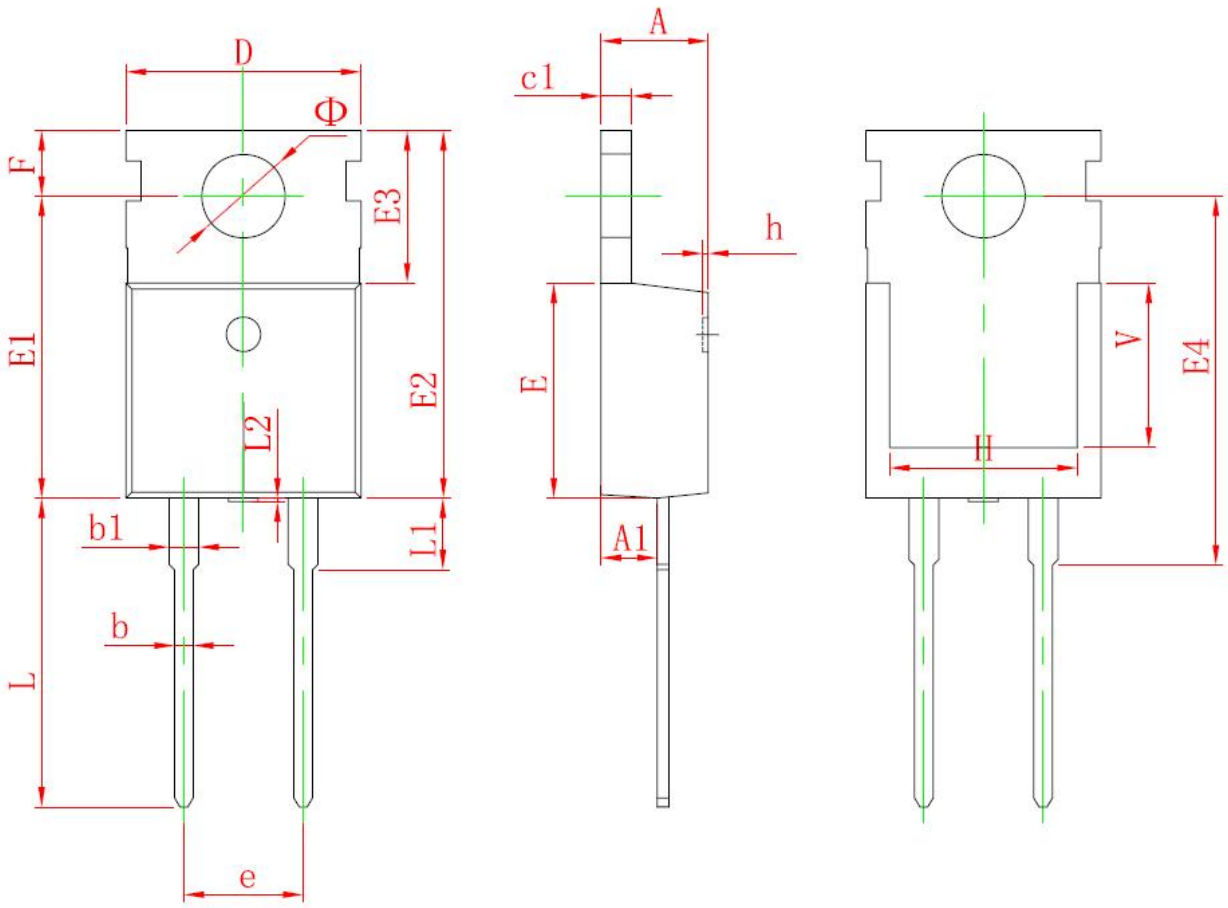


Typical Capacitance Stored Energy



Transient Thermal Impedance

TO-220-2L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.400	4.600	0.173	0.181
A1	2.250	2.550	0.089	0.100
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.330	0.650	0.013	0.026
c1	1.200	1.400	0.047	0.055
D	9.910	10.250	0.390	0.404
E	8.950	9.750	0.352	0.384
E1	12.700	13.000	0.500	0.512
E2	15.500	15.800	0.610	0.622
E3	6.350	6.650	0.250	0.262
E4	15.750	16.050	0.620	0.632
e	4.980	5.180	0.196	0.204
F	2.650	2.950	0.104	0.116
H	7.900	8.100	0.311	0.319
h	0.000	0.300	0.000	0.012
L	12.900	13.400	0.508	0.528
L1	2.850	3.250	0.112	0.128
L2	0.050	0.300	0.002	0.012
V	6.900 REF.			0.272 REF.
Φ	3.400	3.800	0.134	0.150