DESCRIPTION

The S40SC650TL is available in TO-247-3 Package.

V_{RRM}	I_F	Q_C
650V	40A(T_C=150℃)	65nC

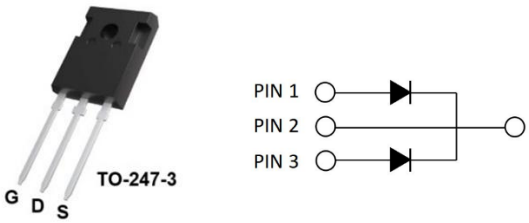
FEATURE

- High voltage
- Low forward voltage
- High-speed switching
- Easy to be paralleling

APPLICATIONS

- Solar inverter
- Power factor correction
- Switch mode power supply

PIN DESCRIPTION



PIN#	DESCRIPTION
1	Gate
2	Drain
3	Source

ORDERING INFORMATION

Package Type	Part Number
TO-247-3	S40SC650TL
Note	SPQ: 30pcs/Tube 1980pcs/Box
AiT provides all RoHS Compliant Products	

ABSOLUTE MAXIMUM RATINGS

T_C = 25°C, unless otherwise specified

V_{RRM}, Repetitive Peak Reverse Voltage		650V
I_F, Continuous Forward Current	T_C = 150°C	40A
I_{FSM}, Non-Repetitive Forward Surge Current	T_C=25°C, t_P=10ms, Half Sine Pulse	170A
I_{FRM}, Repetitive Peak Forward Surge Current	T_C=25°C, t_P=10ms, Half Sine Pulse	140A
P_{TOT}, Power Dissipation	T_C=25°C	159W
	T_C=110°C	68W
T_{STG}, Storage Temperature Range		-55℃ ~ + 175℃
T_J, Operating Junction Temperature Range		-55℃ ~ + 175℃
$R_{\theta JC}$, Thermal Resistance, Junction-to-Case		0.94℃/W

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICS

T_J = 25°C, unless otherwise specified

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
DC Blocking Voltage	V_{DC}	-	650	-	-	V
Forward Voltage	V_F	I_F= 20A, T_C= 25°C	-	1.45	1.80	V
		I_F= 20A, T_C= 175°C	-	1.85	2.40	
Reverse Current	I_R	V_R=650V, T_J=25°C	-	2	20	uA
		V_R=650V, T_J=175°C	-	40	200	
Total Capacitive Charge	Q_C	V_R=400V, T_J=25°C	-	65	-	nC
Total Capacitance	C	V_R=0V, f=1MHz, T_J=25°C	-	1340	-	pF
		V_R=200V, f=1MHz, T_J=25°C	-	120	-	
		V_R=400V, f=1MHz, T_J=25°C	-	109	-	
Capacitance Stored Energy	E_C	V_R=400V	-	16	-	uJ

TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Forward Characteristics

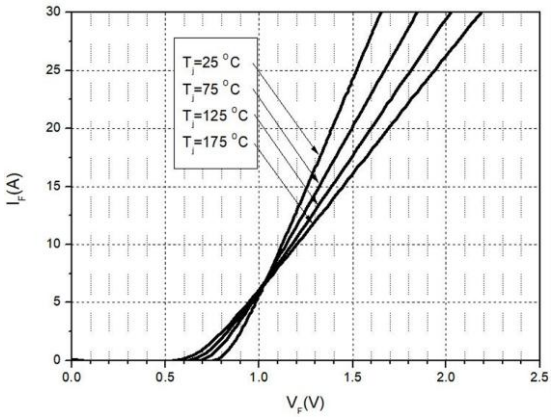


Fig 2. Reverse Characteristics

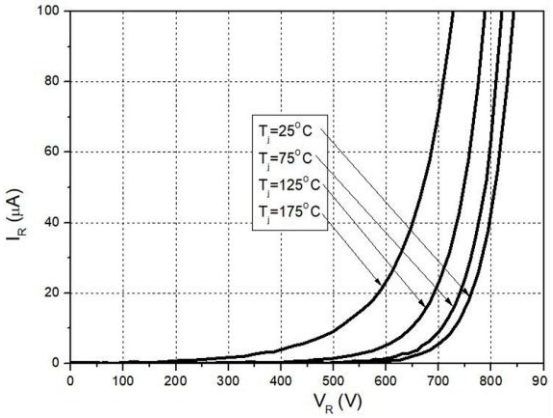


Fig 3. Capacitance vs. Reverse Voltage

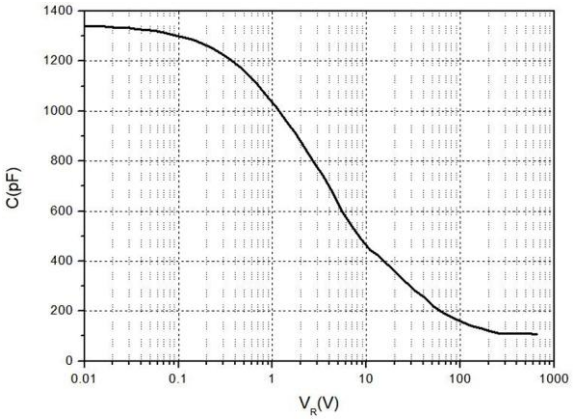


Fig 4. Total Capacitance Charge vs. Reverse Voltage

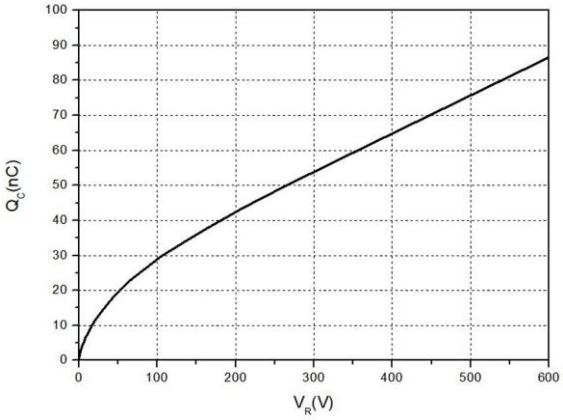


Fig 5. Capacitance Stored Energy

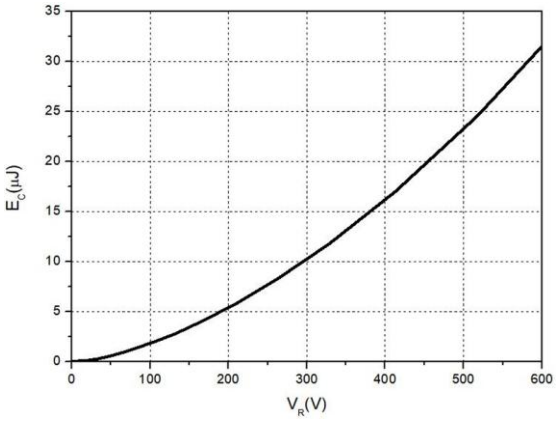


Fig 6. Power Derating

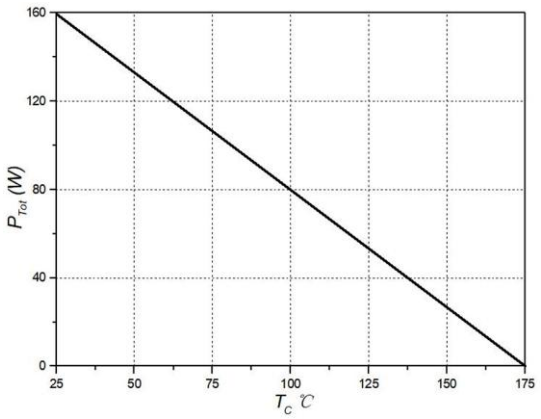


Fig 7. Current Derating

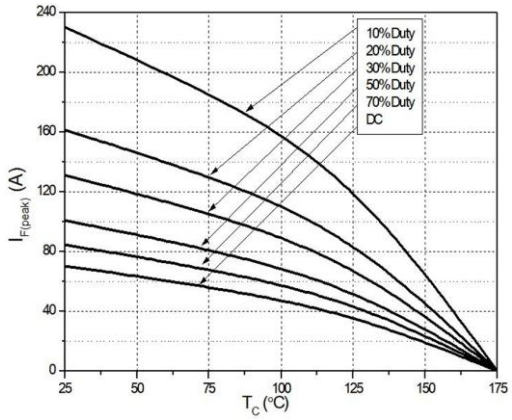
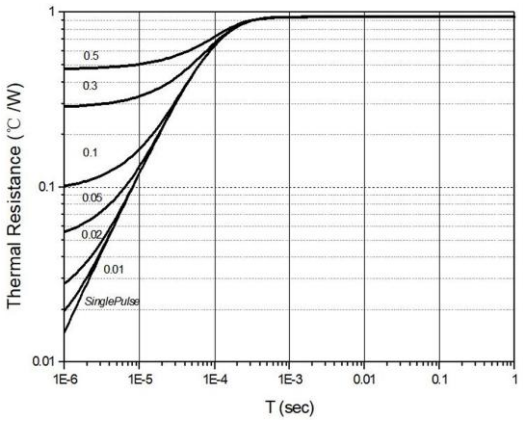
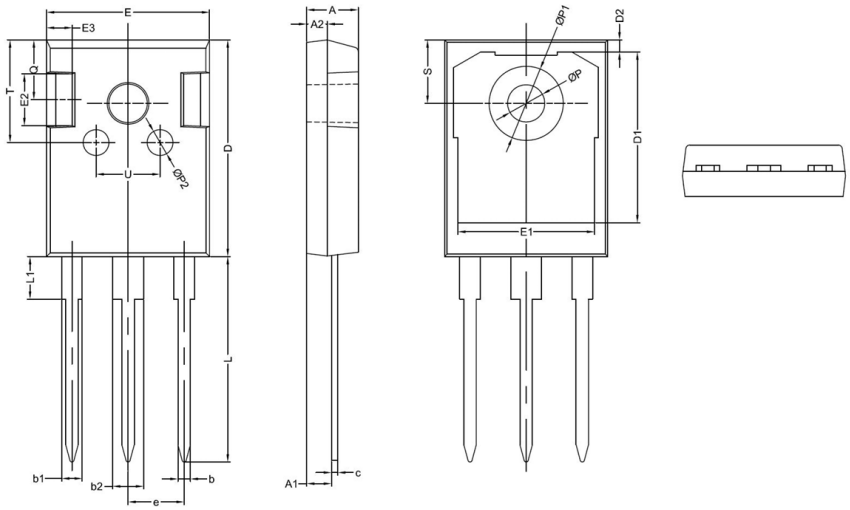


Fig 8. Transient Thermal Impedance



PACKAGE INFORMATION

Dimension in TO-247-3 Package



SYMBOL	MILLIMETERS	
	Min.	Max.
A	4.800	5.200
A1	2.210	2.610
A2	1.900	2.100
b	1.100	1.350
b1	2.000	
b2	3.000	
c	0.550	0.750
D	20.800	21.200
D1	16.550	
D2	1.200	
E	15.600	16.000
E1	13.300	
E2	5.000	
E3	2.500	
e	5.440	
L	19.420	20.420
L1	4.130	
P	3.500	3.700
P1	-	7.400
P2	2.500	
Q	5.800	
S	6.050	6.250
T	10.000	
U	6.200	

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