

General Description

The SMC6A65F is the highest performance N-ch MOSFETs with specialized high voltage technology, which provide excellent RDS(on) and gate charge for most of the SPS, Charger, Adapter and lighting applications.

The SMC6A65F meet the RoHS and Green Product requirement, 100% EAS guaranteed with full function reliability approved.

Features

- Advanced high cell density Trench technology
- Super Low Gate Charge
- 100% EAS Guaranteed
- Green Device Available

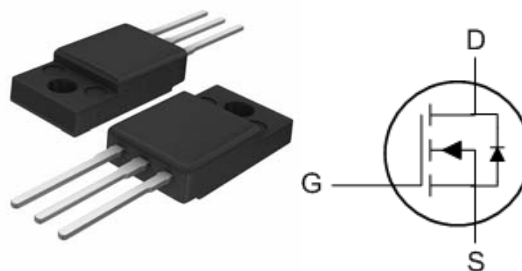
Product Summary

BVDSS	RSDON	ID
650v	1.7Ω	6A

Applications

- High efficient switched mode power supplies
- LED Lighting
- LCD TV/ Monitor
- Adapter

TO220F Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	650	V
V_{GS}	Gate-Source Voltage	± 30	V
I_{DM}	Pulsed Drain Current ²	6	A
$I_{D@TC=25^{\circ}C}$	Continuous Drain Current, $V_{GS} @ 10V$ ¹	6	A
$P_{D@TC=25^{\circ}C}$	Total Power Dissipation ⁴	40	W
T_{STG}	Storage Temperature Range	-55 to 150	$^{\circ}C$
T_J	Operating Junction Temperature Range	-55 to 150	$^{\circ}C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient (Steady State) ¹	---	62	$^{\circ}C/W$
$R_{\theta JC}$	Thermal Resistance Junction-Case ¹	---	3	$^{\circ}C/W$

Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	650	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =10V, I _D =3A	0.85		1.7	Ω
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	2	---	5	V
ΔV _{GS(th)}	V _{GS(th)} Temperature Coefficient		---		---	mV/°C
I _{DSS}	Drain-Source Leakage Current	V _{DS} =520V, V _{GS} =0V, T _J =25°C	---	---	2	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±24V, V _{DS} =0V	---	---	±100	nA

Guaranteed Avalanche Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
EAS	Single Pulse Avalanche Energy ⁵	V _{DD} =50V, L=1mH	4.2	---	---	mJ

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V _{SD}	Diode Forward Voltage ²	V _{GS} =0V, I _S =1A, T _J =25°C	---	---	1	V

Note :

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%
- 3.The EAS data shows Max. rating . The test condition is V_{DD}=50V, V_{GS}=10V, L=1mH, I_{AS}=1.5A
- 4.The power dissipation is limited by 150°C junction temperature
- 5.The Min. value is 100% EAS tested guarantee.
- 6.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.