

CMH65R140

650V, 110mΩ typ., 24A N-Channel Super Junction Power MOSFET

General Description

The 65R140 is power MOSFET using Cmos's advanced super junction technology that can realize very low on resistance and gate charge. It will provide much high efficiency by using optimized charge coupling technology. These devices are well suited for the switching power applications such as PFC, server/telecom power, FPD TV power, ATX power and industrial power applications.

Features

- Low On-Resistance
- 100% avalanche tested
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	650	V
V_{GS}	Gate-Source Voltage	±30	V
$I_D@T_C=25^{\circ}C$	Continuous Drain Current	24	A
$I_D@T_C=100^{\circ}C$	Continuous Drain Current	17	A
I_{DM}	Pulsed Drain Current	96	A
EAS	Single Pulse Avalanche Energy (Note 1)	1500	mJ
$P_D@T_C=25^{\circ}C$	Total Power Dissipation	250	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

* Drain current limited by maximum junction temperature.

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	64	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	3.57	°C/W

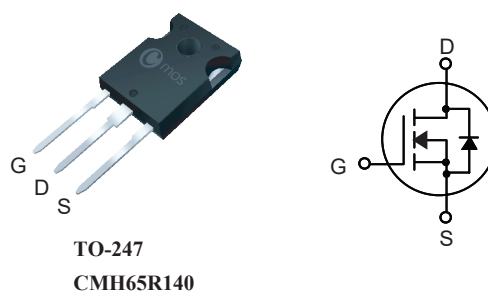
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
650V	140mΩ	24A

Applications

- Charger
- Adaptor
- Power Supply

TO-247 Pin Configuration



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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	V _{GS} =10V , I _D =12A	---	110	140	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	3	---	5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =650V , V _{GS} =0V	---	---	5	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±30V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =10V , I _D =12A	---	12	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	9.6	---	Ω
Q _g	Total Gate Charge	I _D =11A	---	46	---	nC
Q _{gs}	Gate-Source Charge	V _{DS} =480V	---	14	---	
Q _{gd}	Gate-Drain Charge	V _{GS} =10V	---	24	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} =400V	---	60	---	ns
T _r	Rise Time	V _{GS} =10V	---	61	---	
T _{d(off)}	Turn-Off Delay Time	I _D =11A	---	140	---	
T _f	Fall Time	R _G =27Ω	---	31	---	
C _{iss}	Input Capacitance	V _{DS} =45V , V _{GS} =0V , f=1MHz	---	1650	---	pF
C _{oss}	Output Capacitance		---	740	---	
C _{rss}	Reverse Transfer Capacitance		---	5	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	24	A
I _{SM}	Pulsed Source Current		---	---	96	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =12A	---	0.9	1.4	V

Note :

1.The EAS data shows Max. rating .The test condition is V_{DS}=80V , V_{GS}=10V , L=30mH , I_{AS}=10A.

This product has been designed and qualified for the consumer market.

Cmos assumes no liability for customers' product design or applications.

Cmos reserves the right to improve product design ,functions and reliability without notice.

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Typical Characteristics

