

General Description

The CMSA8053 uses advanced trench technology to provide excellent RDS (ON), This device is ideal for boost converters and synchronous rectifiers for consumer, telecom, industrial power supplies and LED backlighting.

Features

- Low On-Resistance
- 100% avalanche tested
- Small Footprint (5x6mm) for Compact Design
- RoHS Compliant

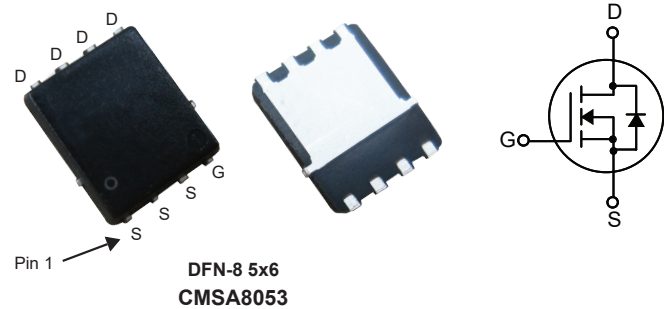
Product Summary

BVDSS	RDSON	ID
60V	15mΩ	30A

Applications

- DC-DC Converter
- Motor Drive
- Powertrain Management

DFN-8 5x6 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	30	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	21	A
I_{DM}	Pulsed Drain Current	90	A
EAS	Single Pulse Avalanche Energy ¹	169	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	35	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	---	55	°C/W
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	3.57	°C/W

N-Channel Enhancement Mode Field Effect Transistor

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	60	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =15A	---	---	15	mΩ
		V _{GS} =5V , I _D =6A	---	---	22	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250μA	2	---	4	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =48V , V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±20V , V _{DS} =0V	---	---	±100	nA
Q _g	Total Gate Charge	V _{DD} =30V , I _D =20A V _{GS} =10 V	---	20	---	nC
Q _{gs}	Gate-Source Charge		---	4.7	---	
Q _{gd}	Gate-Drain Charge		---	2.6	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =30V , V _{GS} =10V , R _L =1.5Ω R _{GEN} =3Ω	---	10	---	ns
T _r	Rise Time		---	3	---	
T _{d(off)}	Turn-Off Delay Time		---	26	---	
T _f	Fall Time		---	2.5	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	2150	---	pF
C _{oss}	Output Capacitance		---	250	---	
C _{rss}	Reverse Transfer Capacitance		---	150	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Diode continuous forward current	V _G =V _D =0V , Force Current	---	---	30	A
I _{S,pulse}	Diode pulse current		---	---	90	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _F =15A , T _J =25°C	---	0.83	1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=30V,V_{GS}=10V,L=0.5mH ,I_{AS}=26A.

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