

CMSA075N04

40V, 6.6mΩ typ., 65A N-Channel MOSFET

General Description

The CMSA075N04 uses advanced SGT technology to provide excellent RDS(ON). This device is ideal for load switch and battery protection applications.

Features

- Low ON-resistance
- Low Gate Charge
- Surface Mount Package
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	40	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	65	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	45	A
I_{DM}	Pulsed Drain Current	260	A
EAS	Single Pulse Avalanche Energy ¹	56	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	45	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-ambient(Steady-State)	---	60	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	2.78	°C/W

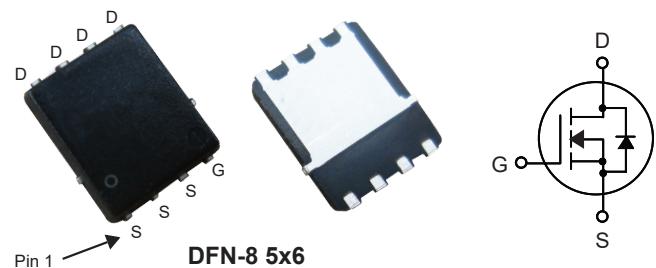
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
40V	7.5mΩ	65A

Applications

- POL applications
- BLDC Motor driver

DFN-8 5x6 Pin Configuration



Type	Package	Marking
CMSA075N04	DFN-8 5x6	CMSA075N04

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	40	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =28A	---	6.6	7.5	mΩ
		V _{GS} =4.5V , I _D =25A	---	9.4	12.5	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1	---	3	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =32V , V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =5V , I _D =20A	---	16	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	1.9	---	Ω
Q _g	Total Gate Charge	I _D = 12 A	---	6	---	nC
Q _{gs}	Gate-Source Charge	V _{DS} = 20V	---	3	---	
Q _{gd}	Gate-Drain Charge	V _{GS} = 4.5V	---	1.2	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} = 15V	---	15	---	ns
T _r	Rise Time	V _{GS} = 10 V	---	6	---	
T _{d(off)}	Turn-Off Delay Time	R _{GEN} = 3.3Ω	---	20	---	
T _f	Fall Time	I _D = 1A	---	11	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	770	---	pF
C _{oss}	Output Capacitance		---	170	---	
C _{riss}	Reverse Transfer Capacitance		---	6	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	65	A
I _{SM}	Pulsed Source Current		---	---	260	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =28A , T _J =25°C	---	0.9	1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=25V , V_{GS}=10V , L=0.5mH , I_{AS}=15A.

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Typical Characteristics

