

CMLM0574

**MULTI DISCRETE MODULE™
SURFACE MOUNT SILICON
N-CHANNEL MOSFET AND
LOW V_F SCHOTTKY DIODE**



www.centrasemi.com



SOT-563 CASE

• Device is **Halogen Free** by design

APPLICATIONS:

- DC-DC Converters
- Battery Powered Portable Equipment

MAXIMUM RATINGS - CASE: (T_A=25°C)

Power Dissipation (Note 1)	
Power Dissipation (Note 2)	
Power Dissipation (Note 3)	
Operating and Storage Junction Temperature	
Thermal Resistance	

MAXIMUM RATINGS - Q1: (T_A=25°C)

Drain-Source Voltage	
Gate-Source Voltage	
Continuous Drain Current	

MAXIMUM RATINGS - D1: (T_A=25°C)

Peak Repetitive Reverse Voltage	
Continuous Forward Current	
Peak Repetitive Forward Current, tp≤1.0ms	
Peak Forward Surge Current, tp=8.0ms	

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMLM0574 is a Multi Discrete Module™ consisting of a single N-Channel enhancement-mode MOSFET and a low V_F Schottky diode packaged in a space saving SOT-563 surface mount case. This device is designed for small signal general purpose applications where size and operational efficiency are prime requirements.

MARKING CODE: 57C

FEATURES:

- ESD protection up to 2kV
- Low r_{DS(on)} Transistor (560mΩ MAX @ V_{GS}=2.5V)
- Low V_F Schottky Diode (0.47V MAX @ 0.5A)

SYMBOL		UNITS
P _D	350	mW
P _D	300	mW
P _D	150	mW
T _J , T _{stg}	-65 to +150	°C
θ _{JA}	357	°C/W

SYMBOL		UNITS
V _{DS}	30	V
V _{GS}	8.0	V
I _D	450	mA

SYMBOL		UNITS
V _R RM	40	V
I _F	500	mA
I _{FRM}	3.5	A
I _{FSM}	10	A

ELECTRICAL CHARACTERISTICS - Q1: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I _{GSSF} , I _{GSSR}	V _{GS} =8.0V, V _{DS} =0			3.0	μA
I _{DSS}	V _{DS} =30V, V _{GS} =0			1.0	μA
BV _{DSS}	V _{GS} =0, I _D =10μA	30			V
V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.5		1.0	V
V _{SD}	V _{GS} =0, I _S =400mA	0.5		1.1	V
r _{DS(ON)}	V _{GS} =4.5V, I _D =200mA		280	460	mΩ
r _{DS(ON)}	V _{GS} =2.5V, I _D =100mA		390	560	mΩ
r _{DS(ON)}	V _{GS} =1.8V, I _D =75mA		550	730	mΩ
g _{FS}	V _{DS} =10V, I _D =100mA	200			mS

- Notes: (1) Ceramic or aluminum core PC Board with copper mounting pad area of 4.0mm²
 (2) FR-4 Epoxy PC Board with copper mounting pad area of 4.0mm²
 (3) FR-4 Epoxy PC Board with copper mounting pad area of 1.4mm²

R4 (1-July 2015)

CMLM0574

MULTI DISCRETE MODULE™
SURFACE MOUNT SILICON
N-CHANNEL MOSFET AND
LOW V_F SCHOTTKY DIODE



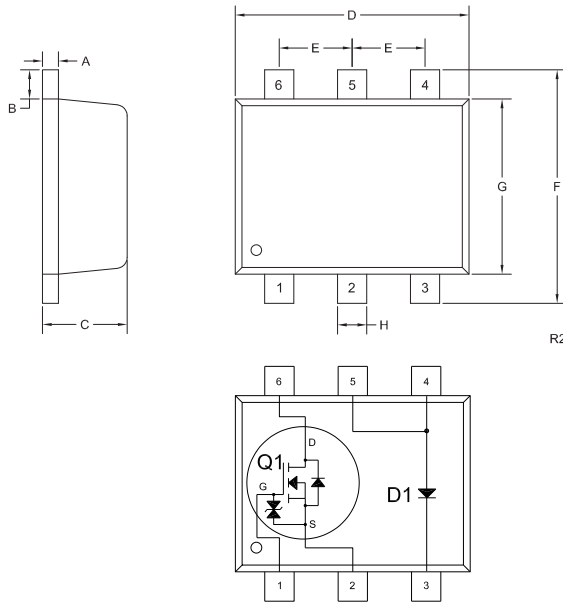
ELECTRICAL CHARACTERISTICS - Q1 - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	TYP	UNITS
$Q_{g(\text{tot})}$	$V_{DS}=15\text{V}, V_{GS}=4.5, I_D=1.0\text{A}$	0.792	nC
Q_{gs}	$V_{DS}=15\text{V}, V_{GS}=4.5, I_D=1.0\text{A}$	0.15	nC
Q_{gd}	$V_{DS}=15\text{V}, V_{GS}=4.5, I_D=1.0\text{A}$	0.23	nC
C_{rss}	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$	5.0	pF
C_{iss}	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$	43	pF
C_{oss}	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$	8.0	pF

ELECTRICAL CHARACTERISTICS - D1: ($T_A=25^\circ\text{C}$)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	$V_R=10\text{V}$		20	μA
I_R	$V_R=30\text{V}$		100	μA
BV_R	$I_R=500\mu\text{A}$	40		V
V_F	$I_F=100\mu\text{A}$		0.13	V
V_F	$I_F=1.0\text{mA}$		0.21	V
V_F	$I_F=10\text{mA}$		0.27	V
V_F	$I_F=100\text{mA}$		0.35	V
V_F	$I_F=500\text{mA}$		0.47	V
C_J	$V_R=1.0\text{V}, f=1.0\text{MHz}$		50	pF

SOT-563 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.0027	0.007	0.07	0.18
B	0.008		0.20	
C	0.017	0.024	0.45	0.60
D	0.059	0.067	1.50	1.70
E	0.020		0.50	
F	0.059	0.067	1.50	1.70
G	0.043	0.051	1.10	1.30
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R2)

LEAD CODE:

- 1) Gate Q1
- 2) Source Q1
- 3) Cathode D1
- 4) Anode D1
- 5) Anode D1
- 6) Drain Q1

MARKING CODE: 57C

R4 (1-July 2015)

CMLM0574

MULTI DISCRETE MODULE™
SURFACE MOUNT SILICON
N-CHANNEL MOSFET AND
LOW V_F SCHOTTKY DIODE



SERVICES

- Bonded Inventory
- Custom Electrical Screening
- Custom Electrical Characteristic Curves
- SPICE Models
- Custom Packaging
- Package Base Options
- Custom Device Development/ Multi Discrete Modules (MDM™)
- Bare Die Available for Hybrid Applications

LIMITATIONS AND DAMAGES DISCLAIMER: In no event shall Central be liable for any collateral, indirect, punitive, incidental, consequential, or exemplary damages in connection with or arising out of a purchase order or contract or the use of products provided hereunder, regardless of whether Central has been advised of the possibility of such damages. Excluded damages shall include, but not be restricted to: cost of removal or reinstallation, rework, ancillary costs to the procurement of substitute products, loss of profits, loss of savings, loss of use, loss of data, or business interruption. No claim, suit, or action shall be brought against Central more than two (2) years after the related cause of action has occurred.

In no event shall Central's aggregate liability from any warranty, indemnity, or other obligation arising out of or in connection with a purchase order or contract, or any use of any Central product provided hereunder, exceed the total amount paid to Central for the specific products sold under a purchase order or contract with respect to which losses or damages are claimed. The existence of more than one (1) claim against the specific products sold to Buyer under a purchase order or contract shall not enlarge or extend this limit.

Buyer understands and agrees that the foregoing liability limitations are essential elements of a purchase order or contract and that in the absence of such limitations, the material and economic terms of the purchase order or contract would be substantially different.

R4 (1-July 2015)



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.