CMLM0605

MULTI DISCRETE MODULE™

SURFACE MOUNT

LOW $V_{CE\ (SAT)}$ SILICON PNP TRANSISTOR AND LOW V_F SILICON SCHOTTKY DIODE

MDM™ Multi Discrete Module

PICOmini™



SOT-563 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The Central Semiconductor CMLM0605 is a single PNP Transistor and Schottky Diode packaged in a space saving SOT-563 case is designed for small signal general purpose applications where size and operational efficiency are prime requirements.

- Complementary Device: **CMLM0405**
- Combination Low $V_{CE\ (SAT)}$ Transistor and Low V_F Schottky Diode.

MARKING CODES: C65

MAXIMUM RATINGS (SOT-563 Package): (T_A=25°C)	**SYMBOL**		**UNITS**
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

MAXIMUM RATINGS Q1: (T_A=25°C)	**SYMBOL**		**UNITS**
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	200	mA

MAXIMUM RATINGS D1: (T_A=25°C)	**SYMBOL**		**UNITS**
Peak Repetitive Reverse Voltage	V_{RRM}	40	V
Continuous Forward Current	I_F	500	mA
Peak Repetitive Forward Current, tp ≤ 1ms	I_{FRM}	3.5	A
Forward Surge Current, tp=8ms	I_{FSM}	10	A

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

SYMBOL	**TEST CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNITS**
I_{CEV}	V_{CE}=30V, V_{EB}=3.0V	-	-	50	nA
BV_{CBO}	I_C=10μA	60	96	-	V
BV_{CEO}	I_C=1.0mA	40	63	-	V
BV_{EBO}	I_E=10μA	6.0	8.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA	-	0.050	0.100	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA	-	0.100	0.200	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA	0.65	0.75	0.85	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA	-	0.85	0.95	V
h_{FE}	V_{CE}=1.0V, I_C=0.1mA	90	130		
h_{FE}	V_{CE}=1.0V, I_C=1.0mA	100	140		
h_{FE}	V_{CE}=1.0V, I_C=10mA	100	150	300	
h_{FE}	V_{CE}=1.0V, I_C=50mA	70	130		
h_{FE}	V_{CE}=1.0V, I_C=100mA	30	90		
f_T	V_{CE}=20V, I_C=10mA, f=100MHz	300			MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz			4.0	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz			8.0	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz			12	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz			10	$X10^{-4}$

R1 (22-February 2005)

Central™
Semiconductor Corp.

CMLM0605

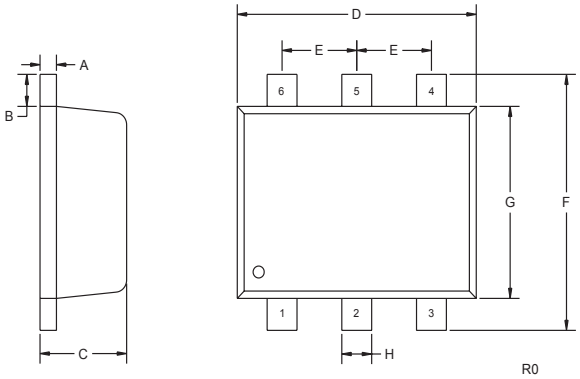
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AND
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ELECTRICAL CHARACTERISTICS Q1 (continued)

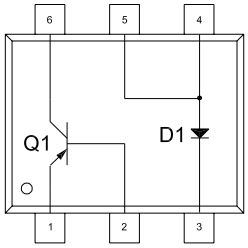
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	100	400	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	60	μmhos
NF	V_{CE}=5.0V,I_C=100μA, R_S =1.0KΩ, f=10Hz to 15.7kHz		4.0	dB
t_d	V_{CC}=3.0V, V_{BE}=0.5V, I_C=10mA, I_{B1}=1.0mA		35	ns
t_r	V_{CC}=3.0V, V_{BE}=0.5V, I_C=10mA, I_{B1}=1.0mA		35	ns
t_s	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		200	ns
t_f	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		50	ns
ELECTRICAL CHARACTERISTICS D1 (T_A=25°C)				
I_R	V_R= 10V		20	μA
I_R	V_R= 30V		100	μA
BV_R	I_R= 500μA	40		V
V_F	I_F= 100μA		0.13	V
V_F	I_F= 1.0mA		0.21	V
V_F	I_F= 10mA		0.27	V
V_F	I_F= 100mA		0.35	V
V_F	I_F= 500mA		0.47	V
C_T	V_R= 1.0V, f=1.0 MHz		50	pF

SOT-563 - MECHANICAL OUTLINE



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.004	0.007	0.10	0.18
B	0.008		0.20	
C	0.022	0.024	0.56	0.60
D	0.059	0.067	1.50	1.70
E	0.020		0.50	
F	0.061	0.067	1.55	1.70
G	0.047		1.20	
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R0)



MARKING CODE: C65

LEAD CODE:
1) EMITTER Q1
2) BASE Q1
3) CATHODE D1
4) ANODE D1
5) ANODE D1
6) COLLECTOR Q1

R1 (22-February 2005)