

CMLM0605
MULTI DISCRETE MODULE™
SURFACE MOUNT
LOW V_{CE} (SAT) SILICON PNP TRANSISTOR
AND
LOW V_F SILICON SCHOTTKY DIODE



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)

Power Dissipation
Operating and Storage
Junction Temperature
Thermal Resistance

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

MAXIMUM RATINGS Q1: (T_A=25°C)

Collector-Base Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Collector Current

SYMBOL		UNITS
V _{CBO}	60	V
V _{CEO}	40	V
V _{EBO}	6.0	V
I _C	200	mA

MAXIMUM RATINGS D1: (T_A=25°C)

Peak Repetitive Reverse Voltage
Continuous Forward Current
Peak Repetitive Forward Current, tp ≤ 1ms
Forward Surge Current, tp=8ms

SYMBOL		UNITS
V _{RRM}	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 _{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

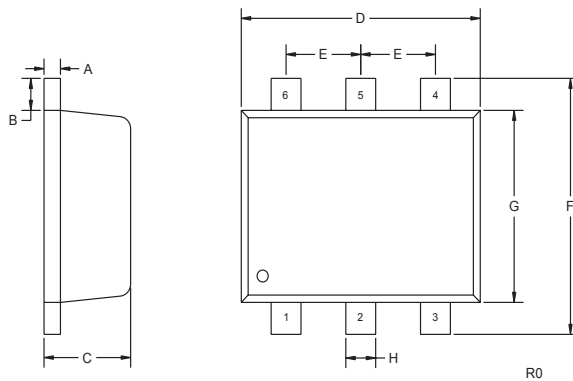
ELECTRICAL CHARACTERISTICS Q1 (continued)

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	$\mu mhos$
NF	$V_{CE}=5.0V, I_C=100\mu A, R_S=1.0K\Omega,$ $f=10Hz$ 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 ($T_A=25^\circ C$)

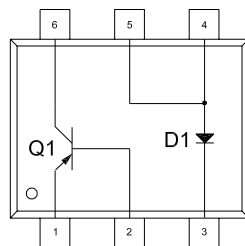
I_R	$V_R=10V$		20	μA
I_R	$V_R=30V$		100	μA
BV_R	$I_R=500\mu A$	40		V
V_F	$I_F=100\mu A$		0.13	V
V_F	$I_F=1.0mA$		0.21	V
V_F	$I_F=10mA$		0.27	V
V_F	$I_F=100mA$		0.35	V
V_F	$I_F=500mA$		0.47	V
C_T	$V_R=1.0V, f=1.0MHz$		50	pF

SOT-563 - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	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)