

1.2 A, Step-Up/Down/Inverting Switching Regulators

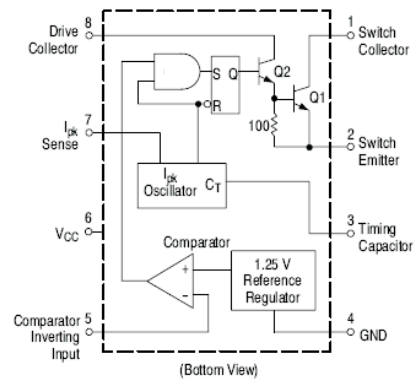
MC34063



SOP8

■ Features

- Low Standby Current
- Current Limiting
- Output Switch Current to 1.2 A
- Output Voltage Adjustable
- Frequency Operation to 100 kHz
- Precision 2% Reference



■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Power Supply Voltage	V_{CC}	40	V
Comparator Input Voltage Range	V_{IR}	-0.3 to +40	V
Switch Collector Voltage	$V_{C(\text{switch})}$	40	V
Switch Emitter Voltage ($V_{Pin\ 1} = 40\text{ V}$)	$V_{E(\text{switch})}$	40	V
Switch Collector to Emitter Voltage	$V_{CE(\text{switch})}$	40	V
Driver Collector Voltage	$V_{C(\text{driver})}$	40	V
Driver Collector Current *	$I_{C(\text{driver})}$	100	mA
Switch Current	I_{SW}	1.2	A
Power Dissipation and Thermal Characteristics			
$T_a = 25^\circ\text{C}$	P_D	625	mW
Thermal Resistance	$R_{\theta JA}$	160	$^\circ\text{C}/\text{W}$
Operating Junction Temperature	T_J	150	$^\circ\text{C}$
Operating Ambient Temperature Range	T_A	0 to +70	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 to +150	$^\circ\text{C}$

* Maximum package power dissipation limits must be observed.

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Frequency	fosc	V _{Pin 5} = 0 V, C _T = 1.0 nF, T _A = 25°C	24	33	42	kHz
Charge Current	I _{chg}	V _{CC} = 5.0 V to 40 V, T _A = 25°C	24	35	42	μ A
Discharge Current	I _{dischg}	V _{CC} = 5.0 V to 40 V, T _A = 25°C	140	220	260	μ A
Discharge to Charge Current Ratio	I _{dischg} /I _{chg}	Pin 7 to V _{CC} , T _A = 25°C	5.2	6.5	7.5	
Current Limit Sense Voltage	V _{ipk(sense)}	I _{chg} = I _{dischg} , T _A = 25°C	250	300	350	mV
Saturation Voltage, Darlington Connection	V _{CE(sat)}	I _{SW} = 0.8 A, P _{ins} 1, 8 connected		1.0	1.3	V
Saturation Voltage (Forced β ≈ 20)	V _{CE(sat)}	I _{SW} = 0.8A, R _{Pin 8} = 82 Ω to V _{CC} ,		0.45	0.7	V
DC Current Gain	h _{FE}	I _{SW} = 0.8 A, V _{CE} = 5.0 V, T _A = 25°C	50	75		
Collector Off-State Current	I _{C(off)}	V _{CE} = 40 V		0.01	100	μ A
Threshold Voltage T _A = 25°C T _A = 0°C to 70°C	V _{th}		1.225 1.21	1.25	1.275 1.29	V
Threshold Voltage Line Regulation	Reg _{line}	V _{CC} = 3.0 V to 40 V		1.4	5.0	mV
Input Bias Current	I _{IB}	V _{in} = 0 V		-20	-400	nA
Supply Current V _{Pin 5} > V _{th} , Pin 2 = GND, remaining pins open	I _{CC}	V _{CC} = 5.0 V to 40 V, C _T = 1.0 nF, Pin 7 = V _{CC} ,			4.0	mA