MC78M20C/B ELECTRICAL CHARACTERISTICS (V_I = 29 V, I_O = 350 mA, T_J = T_{low} to T_{high}, $P_D \le$ 5.0 W, unless otherwise noted) (Note 6)

Characteristics	Symbol	Min	Typ	Max	Unit
Output Voltage (T_J = 25°C)	V_O	19.2	20	20.8	Vdc
Output Voltage Variation (23 Vdc ≤ V_I ≤ 35 Vdc, 5.0 mA ≤ I_O ≤ 350 mA)	V_O	19	−	21	Vdc
Line Regulation (T_J = 25°C, 23 Vdc ≤ V_I ≤ 35 Vdc, I_O = 200 mA)	Reg_{line}	−	10	50	mV
Load Regulation (T_J = 25°C, 5.0 mA ≤ I_O ≤ 500 mA) (T_J = 25°C, 5.0 mA ≤ I_O ≤ 200 mA)	Reg_{load}	 − −	 30 10	 400 200	mV
Input Bias Current (T_J = 25°C)	I_{IB}	−	3.2	6.5	mA
Quiescent Current Change (23 Vdc ≤ V_I ≤ 35 Vdc, I_O = 200 mA) (5.0 mA ≤ I_O ≤ 350 mA)	ΔI_{IB}	 − −	 − −	 0.8 0.5	mA
Output Noise Voltage (T_A = 25°C, 10 Hz ≤ f ≤ 100 kHz)	V_n	−	110	−	μV
Ripple Rejection (I_O = 100 mA, f = 120 Hz, 24 V ≤ V_I ≤ 34 V) (I_O = 300 mA, f = 120 Hz, 24 V ≤ V_I ≤ 34 V, T_J = 25°C)	RR	 52 52	 − 70	 − −	dB
Dropout Voltage (T_J = 25°C)	$V_I - V_O$	−	2.0	−	Vdc
Short Circuit Current Limit (T_J = 25°C, V_I = 35 V)	I_{OS}	−	50	−	mA
Average Temperature Coefficient of Output Voltage (I_O = 5.0 mA)	$\Delta V_O/\Delta T$	−	±0.5	−	mV/°C
Peak Output Current (T_J = 25°C)	I_O	−	700	−	mA

MC78M24C/B ELECTRICAL CHARACTERISTICS (V_I = 33 V, I_O = 350 mA, T_J = T_{low} to T_{high}, $P_D \le$ 5.0 W, unless otherwise noted) (Note 6)

Characteristics	Symbol	Min	Typ	Max	Unit
Output Voltage (T_J = 25°C)	V_O	23	24	25	Vdc
Output Voltage Variation (27 Vdc ≤ V_I ≤ 38 Vdc, 5.0 mA ≤ I_O ≤ 350 mA)	V_O	22.8	−	25.2	Vdc
Line Regulation (T_J = 25°C, 27 Vdc ≤ V_I ≤ 38 Vdc, I_O = 200 mA)	Reg_{line}	−	10	50	mV
Load Regulation (T_J = 25°C, 5.0 mA ≤ I_O ≤ 500 mA) (T_J = 25°C, 5.0 mA ≤ I_O ≤ 200 mA)	Reg_{load}	 − −	 30 10	 480 240	mV
Input Bias Current (T_J = 25°C)	I_{IB}	−	3.2	7.0	mA
Quiescent Current Change (27 Vdc ≤ V_I ≤ 38 Vdc, I_O = 200 mA) (5.0 mA ≤ I_O ≤ 350 mA)	ΔI_{IB}	 − −	 − −	 0.8 0.5	mA
Output Noise Voltage (T_A = 25°C, 10 Hz ≤ f ≤ 100 kHz)	V_n	−	170	−	μV
Ripple Rejection (I_O = 100 mA, f = 120 Hz, 28 V ≤ V_I ≤ 38 V) (I_O = 300 mA, f = 120 Hz, 28 V ≤ V_I ≤ 38 V, T_J = 25°C)	RR	 50 50	 − 70	 − −	dB
Dropout Voltage (T_J = 25°C)	$V_I - V_O$	−	2.0	−	Vdc
Short Circuit Current Limit (T_J = 25°C)	I_{OS}	−	50	−	mA
Average Temperature Coefficient of Output Voltage (I_O = 5.0 mA)	$\Delta V_O/\Delta T$	−	±0.5	−	mV/°C
Peak Output Current (T_J = 25°C)	I_O	−	700	−	mA

6. T_{low} = 0°C for MC78MxxAC, C T_{high} = +125°C for MC78MxxAB, AC, B, C
   = −40°C for MC78MxxAB, B

ORDERING INFORMATION

Device	Output Voltage	Temperature Range	Package	Marking	Shipping†
MC78M05CDT	5.0 V	T_J = 0° to +125°C	DPAK−3	78M05	75 Units / Rail
MC78M05CDTG			DPAK−3 (Pb−Free)	78M05	
MC78M05CDTRK			DPAK−3	78M05	2500 Units / Tape & Reel
MC78M05CDTRKG			DPAK−3 (Pb−Free)	78M05	
MC78M05ACDT			DPAK−3	8M05D	75 Units / Rail
MC78M05ACDTG			DPAK−3 (Pb−Free)	8M05D	
MC78M05ACDTRK			DPAK−3	8M05D	2500 Units / Tape & Reel
MC78M05ACDTRKG			DPAK−3 (Pb−Free)	8M05D	
MC78M05CT			TO−220	78M05CT	50 Units / Rail
MC78M05CTG			TO−220 (Pb−Free)	78M05CT	
MC78M05ACT			TO−220	78M05ACT	50 Units / Rail
MC78M05ACTG			TO−220 (Pb−Free)	78M05ACT	
MC78M05ABDT		T_J = −40° to +125°C	DPAK−3	8M05A	75 Units / Rail
MC78M05ABDTG			DPAK−3 (Pb−Free)	8M05A	
MC78M05ABDTRK			DPAK−3	8M05A	2500 Units / Tape & Reel
MC78M05ABDTRKG			DPAK−3 (Pb−Free)	8M05A	
MC78M05ABT			TO−220	78M05ABT	50 Units / Rail
MC78M05ABTG			TO−220 (Pb−Free)	78M05ABT	
MC78M05BDT			DPAK−3	8M05B	75 Units / Rail
MC78M05BDTG			DPAK−3 (Pb−Free)	8M05B	
MC78M05BDTRK			DPAK−3	8M05B	2500 Units / Tape & Reel
MC78M05BDTRKG			DPAK−3 (Pb−Free)	8M05B	
MC78M05BT			TO−220	78M05BT	50 Units / Rail
MC78M05BTG			TO−220 (Pb−Free)	78M05BT	

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

ORDERING INFORMATION

Device	Output Voltage	Temperature Range	Package	Marking	Shipping†
MC78M06CDT	6.0 V	T_J = 0° to +125°C	DPAK−3	78M06	75 Units / Rail
MC78M06CDTG			DPAK−3 (Pb−Free)	78M06	
MC78M06CDTRK			DPAK−3	78M06	2500 Units / Tape & Reel
MC78M06CDTRKG			DPAK−3 (Pb−Free)	78M06	
MC78M06CT			TO−220	78M06CT	50 Units / Rail
MC78M06CTG			TO−220 (Pb−Free)	78M06CT	
MC78M06BT		T_J = −40° to +125°C	TO−220	78M06BT	
MC78M06BTG			TO−220 (Pb−Free)	78M06BT	
MC78M08CDT	8.0 V	T_J = 0° to +125°C	DPAK−3	78M08	75 Units / Rail
MC78M08CDTG			DPAK−3 (Pb−Free)	78M08	
MC78M08CDTRK			DPAK−3	78M08	2500 Units / Tape & Reel
MC78M08CDTRKG			DPAK−3 (Pb−Free)	78M08	
MC78M08ACDT			DPAK−3	8M08D	75 Units / Rail
MC78M08ACDTG			DPAK−3 (Pb−Free)	8M08D	
MC78M08ACDTRK			DPAK−3	8M08D	2500 Units / Tape & Reel
MC78M08ACDTRKG			DPAK−3 (Pb−Free)	8M08D	
MC78M08CT			TO−220	78M08CT	50 Units / Rail
MC78M08CTG			TO−220 (Pb−Free)	78M08CT	
MC78M08ACT			TO−220	78M08ACT	
MC78M08ACTG			TO−220 (Pb−Free)	78M08ACT	
MC78M08ABDT		T_J = −40° to +125°C	DPAK−3	8M08A	75 Units / Rail
MC78M08ABDTG			DPAK−3	8M08A	
MC78M08ABDTRK			DPAK−3	8M08A	2500 Units / Tape & Reel
MC78M08ABDTRKG			DPAK−3 (Pb−Free)	8M08A	
MC78M08ABT			TO−220	78M08ABT	50 Units / Rail
MC78M08ABTG			TO−220 (Pb−Free)	78M08ABT	
MC78M08BDT			DPAK−3	8M08B	75 Units / Rail
MC78M08BDTG			DPAK−3 (Pb−Free)	8M08B	
MC78M08BDTRK			DPAK−3	8M08B	2500 Units / Tape & Reel
MC78M08BDTRKG			DPAK−3 (Pb−Free)	8M08B	
MC78M08BT			TO−220	78M08BT	50 Units / Rail
MC78M08BTG			TO−220 (Pb−Free)	78M08BT	

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

ORDERING INFORMATION

Device	Output Voltage	Temperature Range	Package	Marking	Shipping†
MC78M09CDT	9.0 V	T_J = 0° to +125°C	DPAK−3	78M09	75 Units / Rail
MC78M09CDTG			DPAK−3 (Pb−Free)	78M09	75 Units / Rail
MC78M09CDTRK			DPAK−3	78M09	2500 Units / Tape & Reel
MC78M09CDTRKG			DPAK−3 (Pb−Free)	78M09	2500 Units / Tape & Reel
MC78M09CT			TO−220	78M09CT	50 Units / Rail
MC78M09CTG			TO−220 (Pb−Free)	78M09CT	50 Units / Rail
MC78M09BDT		T_J = −40° to +125°C	DPAK−3	8M09B	75 Units / Rail
MC78M09BDTG			DPAK−3 (Pb−Free)	8M09B	75 Units / Rail
MC78M09BDTRK			DPAK−3	8M09B	2500 Units / Tape & Reel
MC78M09BDTRKG			DPAK−3 (Pb−Free)	8M09B	2500 Units / Tape & Reel
MC78M12CDT	12 V	T_J = 0° to +125°C	DPAK−3	78M12	75 Units / Rail
MC78M12CDTG			DPAK−3 (Pb−Free)	78M12	
MC78M12CDTRK			DPAK−3	78M12	2500 Units / Tape & Reel
MC78M12CDTRKG			DPAK−3 (Pb−Free)	78M12	
MC78M12ACDT			DPAK−3	8M12D	75 Units / Rail
MC78M12ACDTG			DPAK−3 (Pb−Free)	8M12D	
MC78M12ACDTRK			DPAK−3	8M12D	2500 Units / Tape & Reel
MC78M12ACDTRKG			DPAK−3 (Pb−Free)	8M12D	
MC78M12CT			TO−220	78M12CT	50 Units / Rail
MC78M12CTG			TO−220	78M12CT	
MC78M12ACT			TO−220	78M12ACT	
MC78M12ACTG			TO−220 (Pb−Free)	78M12ACT	
MC78M12ABDT		T_J = −40° to +125°C	DPAK−3	8M12A	75 Units / Rail
MC78M12ABDTG			DPAK−3 (Pb−Free)	8M12A	
MC78M12ABDTRK			DPAK−3	8M12A	2500 Units / Tape & Reel
MC78M12ABDTRKG			DPAK−3 (Pb−Free)	8M12A	
MC78M12ABT			TO−220	78M12ABT	50 Units / Rail
MC78M12ABTG			TO−220 (Pb−Free)	78M12ABT	
MC78M12BDT			DPAK−3	8M12B	75 Units / Rail
MC78M12BDTG			DPAK−3 (Pb−Free)	8M12B	
MC78M12BDTRK			DPAK−3	8M12B	2500 Units / Tape & Reel
MC78M12BDTRKG			DPAK−3 (Pb−Free)	8M12B	
MC78M12BT		T_J = 0° to +125°C	TO−220	78M12BT	50 Units / Rail
MC78M12BTG			TO−220 (Pb−Free)	78M12BT	

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

ORDERING INFORMATION

Device	Output Voltage	Temperature Range	Package	Marking	Shipping†
MC78M15CDT	15 V	T_J = 0° to +125°C	DPAK−3	78M15	75 Units / Rail
MC78M15CDTG			DPAK−3 (Pb−Free)	78M15	
MC78M15CDTRK			DPAK−3	78M15	2500 Units / Tape & Reel
MC78M15CDTRKG			DPAK−3 (Pb−Free)	78M15	
MC78M15ACDT			DPAK−3	8M15D	75 Units / Rail
MC78M15ACDTG			DPAK−3 (Pb−Free)	8M15D	
MC78M15ACDTRK			DPAK−3	8M15D	2500 Units / Tape & Reel
MC78M15ACDTRKG			DPAK−3 (Pb−Free)	8M15D	
MC78M15CT			TO−220	78M15CT	50 Units / Rail
MC78M15CTG			TO−220 (Pb−Free)	78M15CT	
MC78M15ACT			TO−220	78M15ACT	
MC78M15ACTG			TO−220 (Pb−Free)	78M15ACT	
MC78M15ABDT		T_J = −40° to +125°C	DPAK−3	8M15A	75 Units / Rail
MC78M15ABDTG			DPAK−3 (Pb−Free)	8M15A	
MC78M15ABDTRK			DPAK−3	8M15A	2500 Units / Tape & Reel
MC78M15ABDTRKG			DPAK−3 (Pb−Free)	8M15A	
MC78M15ABT			TO−220	78M15ABT	50 Units / Rail
MC78M15ABTG			TO−220 (Pb−Free)	78M15ABT	
MC78M15BDT			DPAK−3	8M15B	75 Units / Rail
MC78M15BDTG			DPAK−3 (Pb−Free)	8M15B	
MC78M15BDTRK			DPAK−3	8M15B	2500 Units / Tape & Reel
MC78M15BDTRKG			DPAK−3 (Pb−Free)	8M15B	
MC78M15BT			TO−220	78M15BT	50 Units / Rail
MC78M15BTG			TO−220 (Pb−Free)	78M15BT	

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.