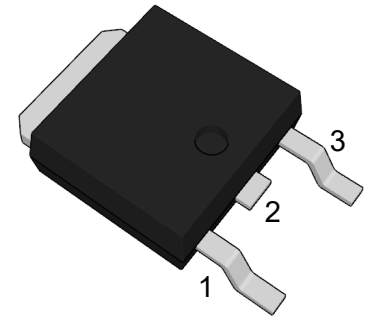


### Description

The PJ78DXXTE series of three-terminal positive regulators are available in TO-252 package. Each type employs internal current limiting, thermal shut-down and safe area protection, making it essentially indestructible. If adequate heat sinking is provided, it can deliver over 1.0A output current, Although designed as fixed voltage regulator, This device can be used with external components to obtain adjustable voltage and currents.

### TO-252



1. VIN 2. GND 3. VOUT

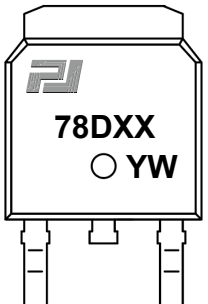
### Features

- Input voltage: up to 35V
- Output voltage: 5V,6V,8V,9V,10V,12V,15V
- Output current up to 1.0A
- Thermal overload protection
- Short circuit current limiting

### Applications

- DC motor drivers
- Household electric appliances
- Industrial power supplies
- Test and measurement equipment

### Ordering Information

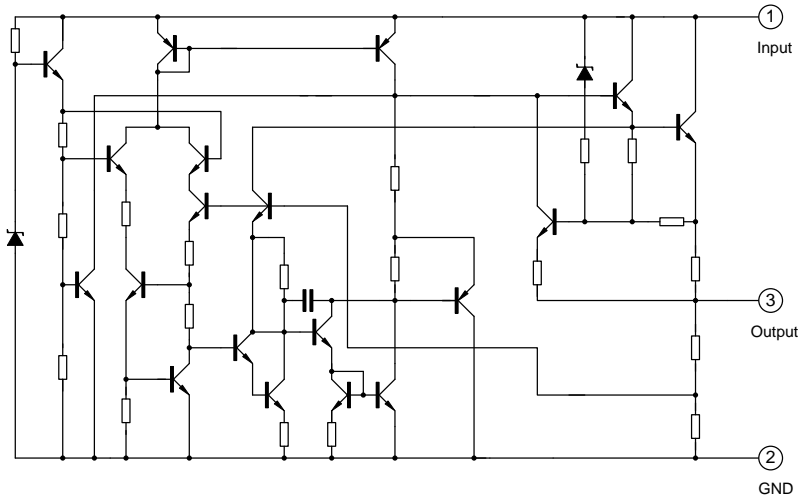
Orderable Device	Package	Reel (inch)	Package Qty (PCS)	Eco Plan <sup>Note</sup>	MSL Level	Marking Code
PJ78D05TE	TO-252	13	2500	RoHS & Green	MSL3	 <p>78DXX: Product code e.g. PJ78D05TE:78D05 YW: Year code and Week code</p>
PJ78D06TE						
PJ78D08TE						
PJ78D09TE						
PJ78D10TE						
PJ78D12TE						
PJ78D15TE						

#### Note:

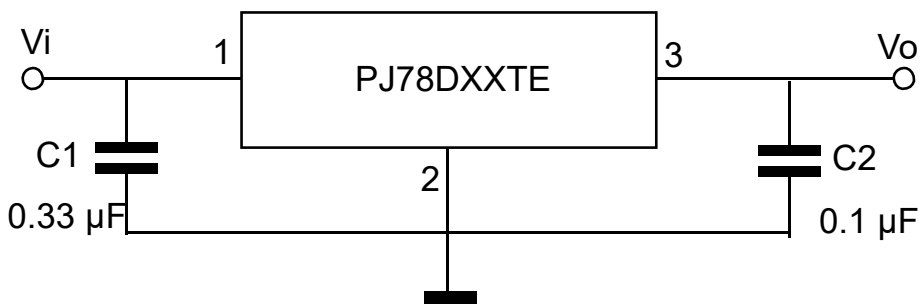
RoHS: PJ defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials.

Green: PJ defines "Green" to mean Halogen-Free and Antimony-Free.

### Function Block Diagram



### Typical Application Circuit



### Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Input Voltage	$V_I$	35	V
Output Current	$I_O$	1	A
Maximum Power Dissipation	$P_D$	1.5	W
Operating Temperature Range	$T_{OPR}$	-40 to +125	°C
Storage Temperature Range	$T_{STG}$	-65 to +150	°C



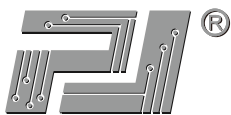
# PJ78DXXTE

## 3-Terminal Voltage Regulators

### PJ78D05TE Electrical Characteristics

$V_I=10V$ ,  $I_O=500mA$ ,  $0<T_J<125^{\circ}C$ ,  $C_I=0.33\mu F$ ,  $C_O=0.1\mu F$ , unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$V_O$	$T_J=25^{\circ}C$	4.8	5.0	5.2	V
		$I_O=5mA$ to 1A, $V_I=8V$ to 20V, $P_D<15W$	4.75	5.0	5.25	V
Line Regulation	$\Delta V_O$	$V_I=7.5V$ to 25V, $T_J=25^{\circ}C$	--	--	100	mV
		$V_I=8V$ to 12V, $T_J=25^{\circ}C$	--	--	50	mV
Load Regulation	$\Delta V_O$	$I_O=5mA$ to 1A, $T_J=25^{\circ}C$	--	--	100	mV
		$I_O=250mA$ to 750mA, $T_J=25^{\circ}C$	--	--	50	mV
Ripple Rejection	RR	$V_I=8V$ to 18V, $f=120Hz$	62	73	--	dB
Dropout Voltage	$V_D$	$I_O=1A$ , $T_J=25^{\circ}C$	--	2	--	V
Quiescent Current	$I_Q$	$T_J=25^{\circ}C$	--	--	8	mA
Temperature coefficient of $V_O$	$\Delta V_O/\Delta T$	$I_O=5mA$	--	0.8	--	mV/ $^{\circ}C$
Quiescent Current Change	$\Delta I_Q$	$V_I=8V$ to 25V	--	--	0.8	mA
		$I_O=5mA$ to 1A	--	--	0.5	mA
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100kHz$ , $T_A=25^{\circ}C$	--	42	--	$\mu V$



# PJ78DXXTE

## 3-Terminal Voltage Regulators

### PJ78D06TE Electrical Characteristics

$V_I=11V$ ,  $I_O=500mA$ ,  $0<T_J<125^{\circ}C$ ,  $C_I=0.33\mu F$ ,  $C_O=0.1\mu F$ , unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$V_O$	$T_J=25^{\circ}C$	5.75	6.0	6.25	V
		$I_O=5mA$ to 1A, $V_I=9V$ to 21V, $P_D<15W$	5.65	6.0	6.25	V
Line Regulation	$\Delta V_O$	$V_I=8.5V$ to 25V, $T_J=25^{\circ}C$	--	--	120	mV
		$V_I=9V$ to 13V, $T_J=25^{\circ}C$	--	--	60	mV
Load Regulation	$\Delta V_O$	$I_O=5mA$ to 1A, $T_J=25^{\circ}C$	--	--	120	mV
		$I_O=250mA$ to 750mA, $T_J=25^{\circ}C$	--	--	60	mV
Ripple Rejection	RR	$V_I=9V$ to 19V, $f=120Hz$	--	68	--	dB
Dropout Voltage	$V_D$	$I_O=1A$ , $T_J=25^{\circ}C$	--	2	--	V
Quiescent Current	$I_Q$	$T_J=25^{\circ}C$	--	--	8	mA
Temperature coefficient of $V_O$	$\Delta V_O/\Delta T$	$I_O=5mA$	--	0.8	--	mV/ $^{\circ}C$
Quiescent Current Change	$\Delta I_Q$	$V_I=9V$ to 25V	--	--	0.8	mA
		$I_O=5mA$ to 1A	--	--	0.5	mA
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100kHz$ , $T_A=25^{\circ}C$	--	42	--	$\mu V$



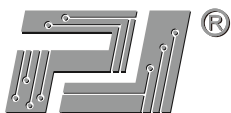
# PJ78DXXTE

## 3-Terminal Voltage Regulators

### PJ78D08TE Electrical Characteristics

$V_I=14V$ ,  $I_O=500mA$ ,  $0<T_J<125^{\circ}C$ ,  $C_I=0.33\mu F$ ,  $C_O=0.1\mu F$ , unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$V_O$	$T_J=25^{\circ}C$	7.84	8.0	8.16	V
		$I_O=5mA$ to 1A, $V_I=11.5V$ to 23V, $P_D<15W$	7.7	8.0	8.3	V
Line Regulation	$\Delta V_O$	$V_I=10.5V$ to 25V, $T_J=25^{\circ}C$	--	--	160	mV
		$V_I=11V$ to 17V, $T_J=25^{\circ}C$	--	--	80	mV
Load Regulation	$\Delta V_O$	$I_O=5mA$ to 1A, $T_J=25^{\circ}C$	--	--	160	mV
		$I_O=250mA$ to 750mA, $T_J=25^{\circ}C$	--	--	80	mV
Ripple Rejection	RR	$V_I=11.5V$ to 21.5V, $f=120Hz$	--	62	--	dB
Dropout Voltage	$V_D$	$I_O=1A$ , $T_J=25^{\circ}C$	--	2	--	V
Quiescent Current	$I_Q$	$T_J=25^{\circ}C$	--	--	8	mA
Temperature coefficient of $V_O$	$\Delta V_O/\Delta T$	$I_O=5mA$	--	1	--	mV/ $^{\circ}C$
Quiescent Current Change	$\Delta I_Q$	$V_I=11.5V$ to 25V	--	--	0.8	mA
		$I_O=5mA$ to 1A	--	--	0.5	mA
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100kHz$ , $T_A=25^{\circ}C$	--	42	--	$\mu V$



# PJ78DXXTE

## 3-Terminal Voltage Regulators

### PJ78D09TE Electrical Characteristics

$V_I=15V$ ,  $I_O=500mA$ ,  $0<T_J<125^{\circ}C$ ,  $C_I=0.33\mu F$ ,  $C_O=0.1\mu F$ , unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$V_O$	$T_J=25^{\circ}C$	8.82	9.0	9.18	V
		$I_O=5mA$ to 1A, $V_I=12.5V$ to 24V, $P_D<15W$	8.65	9.0	9.35	V
Line Regulation	$\Delta V_O$	$V_I=11.5V$ to 26V, $T_J=25^{\circ}C$	--	--	180	mV
		$V_I=12V$ to 18V, $T_J=25^{\circ}C$	--	--	90	mV
Load Regulation	$\Delta V_O$	$I_O=5mA$ to 1A, $T_J=25^{\circ}C$	--	--	180	mV
		$I_O=250mA$ to 750mA, $T_J=25^{\circ}C$	--	--	90	mV
Ripple Rejection	RR	$V_I=12.5V$ to 22.5V, $f=120Hz$	--	61	--	dB
Dropout Voltage	$V_D$	$I_O=1A$ , $T_J=25^{\circ}C$	--	2	--	V
Quiescent Current	$I_Q$	$T_J=25^{\circ}C$	--	--	8	mA
Temperature coefficient of $V_O$	$\Delta V_O/\Delta T$	$I_O=5mA$	--	1.2	--	mV/ $^{\circ}C$
Quiescent Current Change	$\Delta I_Q$	$V_I=12.5V$ to 25V	--	--	0.8	mA
		$I_O=5mA$ to 1A	--	--	0.5	mA
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100kHz$ , $T_A=25^{\circ}C$	--	42	--	$\mu V$



# PJ78DXXTE

## 3-Terminal Voltage Regulators

### PJ78D10TE Electrical Characteristics

$V_I=16V$ ,  $I_O=500mA$ ,  $0 < T_J < 125^\circ C$ ,  $C_I=0.33\mu F$ ,  $C_O=0.1\mu F$ , unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$V_O$	$T_J=25^\circ C$	9.7	10	10.3	V
		$I_O=5mA$ to 1A, $V_I=13.5V$ to 25V, $P_D < 15W$	9.6	10	10.4	V
Line Regulation	$\Delta V_O$	$V_I=12.5V$ to 28V, $T_J=25^\circ C$	--	--	200	mV
		$V_I=14V$ to 20V, $T_J=25^\circ C$	--	--	100	mV
Load Regulation	$\Delta V_O$	$I_O=5mA$ to 1A, $T_J=25^\circ C$	--	--	200	mV
		$I_O=250mA$ to 750mA, $T_J=25^\circ C$	--	--	100	mV
Ripple Rejection	RR	$V_I=13V$ to 23V, $f=120Hz$	--	61	--	dB
Dropout Voltage	$V_D$	$I_O=1A$ , $T_J=25^\circ C$	--	2	--	V
Quiescent Current	$I_Q$	$T_J=25^\circ C$	--	--	8	mA
Temperature coefficient of $V_O$	$\Delta V_O/\Delta T$	$I_O=5mA$	--	1.3	--	mV/ $^\circ C$
Quiescent Current Change	$\Delta I_Q$	$V_I=13V$ to 28V	--	--	0.8	mA
		$I_O=5mA$ to 1A	--	--	0.5	mA
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100kHz$ , $T_A=25^\circ C$	--	42	--	$\mu V$



# PJ78DXXTE

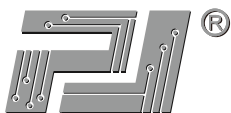
## 3-Terminal Voltage Regulators

### PJ78D12TE Electrical Characteristics

$V_I=19V$ ,  $I_O=500mA$ ,  $0<T_J<125^{\circ}C$ ,  $C_I=0.33\mu F$ ,  $C_O=0.1\mu F$ , unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$V_O$	$T_J=25^{\circ}C$	11.5	12	12.5	V
		$I_O=5mA$ to 1A, $V_I=15.5V$ to 27V, $P_D<15W$	11.4	12	12.6	V
Line Regulation	$\Delta V_O$	$V_I=14.5V$ to 30V, $T_J=25^{\circ}C$	--	--	240	mV
		$V_I=16V$ to 22V, $T_J=25^{\circ}C$	--	--	120	mV
Load Regulation	$\Delta V_O$	$I_O=5mA$ to 1A, $T_J=25^{\circ}C$	--	--	240	mV
		$I_O=250mA$ to 750mA, $T_J=25^{\circ}C$	--	--	120	mV
Ripple Rejection	RR	$V_I=15V$ to 25V, $f=120Hz$	--	60	--	dB
Dropout Voltage	$V_D$	$I_O=1A$ , $T_J=25^{\circ}C$	--	2	--	V
Quiescent Current	$I_Q$	$T_J=25^{\circ}C$	--	--	8	mA
Temperature coefficient of $V_O$	$\Delta V_O/\Delta T$	$I_O=5mA$	--	1.5	--	mV/ $^{\circ}C$
Quiescent Current Change	$\Delta I_Q$	$V_I=15V$ to 30V	--	--	0.8	mA
		$I_O=5mA$ to 1A	--	--	0.5	mA
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100kHz$ , $T_A=25^{\circ}C$	--	42	--	$\mu V$





# PJ78DXXTE

## 3-Terminal Voltage Regulators

### PJ78D15TE Electrical Characteristics

$V_I=21V$ ,  $I_O=500mA$ ,  $0<T_J<125^\circ C$ ,  $C_I=0.33\mu F$ ,  $C_O=0.1\mu F$ , unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$V_O$	$T_J=25^\circ C$	14.4	15	15.6	V
		$I_O=5mA$ to 1A, $V_I=17.5V$ to 30V, $P_D<15W$	14.25	15	15.75	V
Line Regulation	$\Delta V_O$	$V_I=17.5V$ to 30V, $T_J=25^\circ C$	--	--	300	mV
		$V_I=20V$ to 26V, $T_J=25^\circ C$	--	--	150	mV
Load Regulation	$\Delta V_O$	$I_O=5mA$ to 1A, $T_J=25^\circ C$	--	--	300	mV
		$I_O=250mA$ to 750mA, $T_J=25^\circ C$	--	--	150	mV
Ripple Rejection	RR	$V_I=18V$ to 28V, $f=120Hz$	--	60	--	dB
Dropout Voltage	$V_D$	$I_O=1A$ , $T_J=25^\circ C$	--	2	--	V
Quiescent Current	$I_Q$	$T_J=25^\circ C$	--	--	8	mA
Temperature coefficient of $V_O$	$\Delta V_O/\Delta T$	$I_O=5mA$	--	1.8	--	mV/ $^\circ C$
Quiescent Current Change	$\Delta I_Q$	$V_I=18V$ to 30V	--	--	0.8	mA
		$I_O=5mA$ to 1A	--	--	0.5	mA
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100kHz$ , $T_A=25^\circ C$	--	42	--	$\mu V$



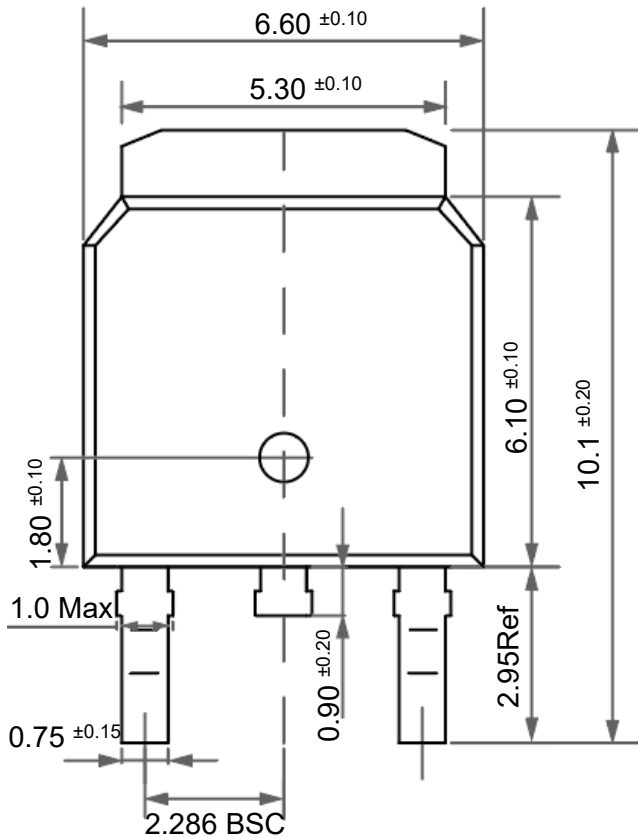
# PJ78DXXTE

## 3-Terminal Voltage Regulators

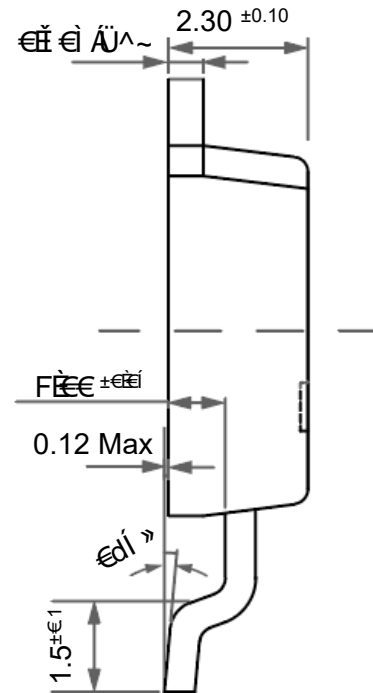
### Package Outline

TO-252

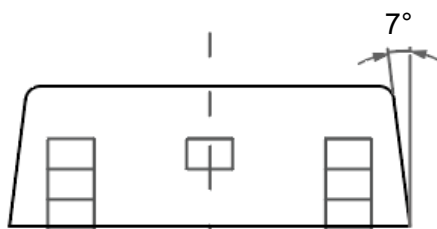
Dimensions in mm



Front View



Side View



Bottom View

单击下面可查看定价，库存，交付和生命周期等信息

[>>PJSEMI\(平晶微\)](#)