Switch Mode Power Supplies

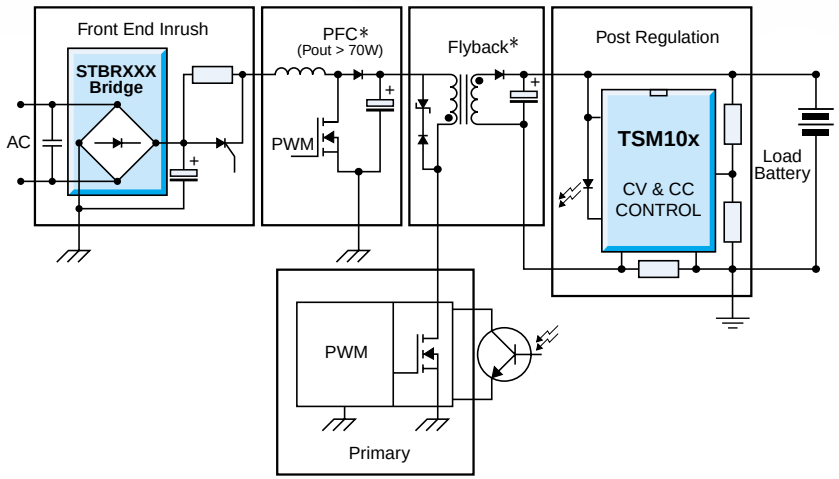
Discretes & Standard ICs

Selection Guide

STMicroelectronics

More Intelligent Solutions

Battery Charger and Adapter



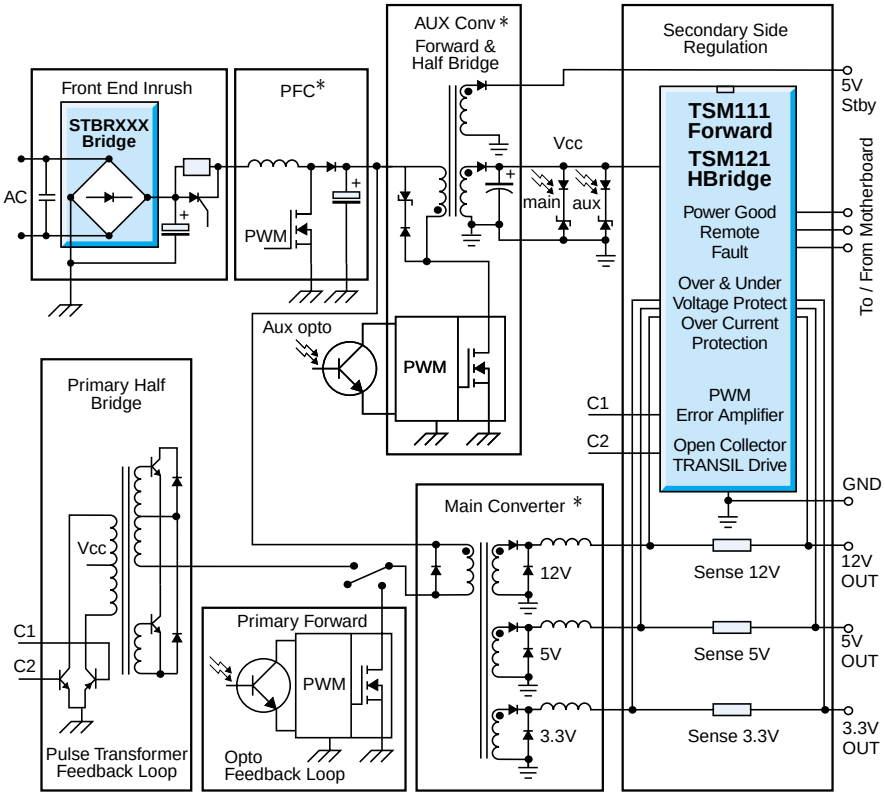
ASSP - Battery Charger and Adapter ICs

P/N	Vref (V)	Precision(%)	Supply Range (V)	Description	Package
TSM101	1.24	2 - 1	4.5 to 36	2 Ored Op-Amps + VRef fixed + Current source	SO-8 TSSOP8
TSM102	2.5	1 - 0.4	4.5 to 36	2 Op-Amps + 1 VRef adj. + 2 Comp. : 1.3µs resp.time	SO-16
TSM103	2.5	1 - 0.4	4.5 to 36	2 Op-Amps + 1 VRef fixed	SO-8
TSM104	2.5	1 - 0.4	4.5 to 36	4 Op-Amps + 1 VRef adj.	DIP-16 SO-16

Rectification Bridges

P/N	$I_{F(AV)}$ (A)	V_{RRM} (V)	I_{FSM} (A)	Package
STBR406	4	600	120	GBU
STBR408	4	800	120	GBU
STBR606	6	600	175	GBU
STBR608	6	800	175	GBU

Secondary Side Regulation



* For transistors and rectifiers see dedicated sections

Voltage Reference

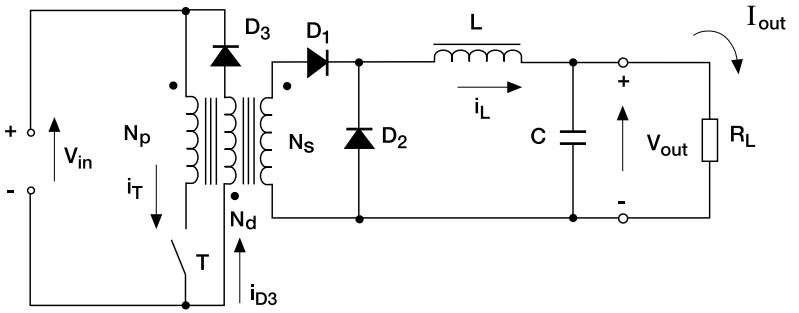
P/N	Vka* (typ) (V)	Precision (%)	Description	Package
TL431	2.5 to 36	2 - 1	Standard for 5V to 36V output voltage	TO-92 DIP / SO-8
TL1431	2.5 to 36	0.4 - 0.25	High precision for 5V to 36V output voltage	TO-92 SO-8
TS431	1.24 to 6	2 - 1	Low voltage for 2.5V to 6V output voltage	TO-92 SOT23-5L

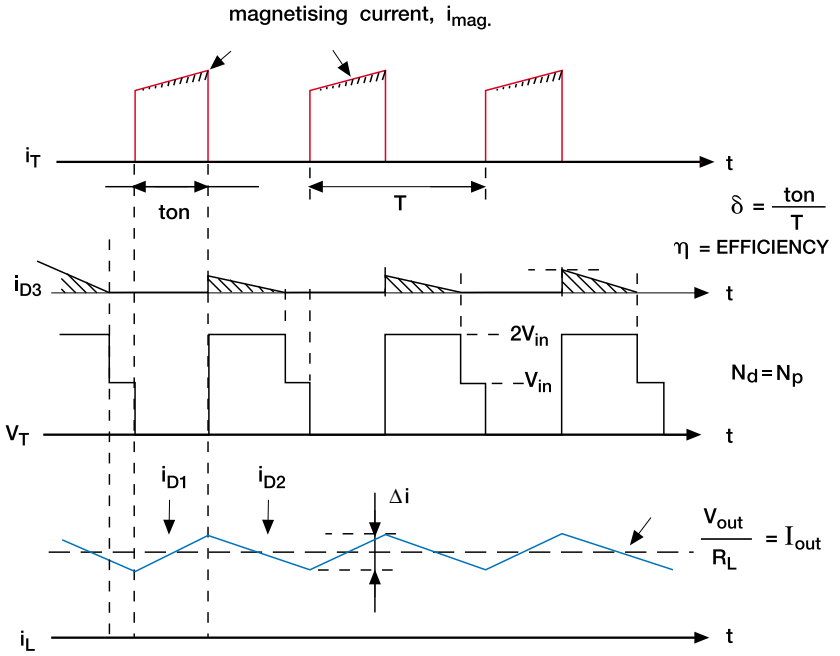
* Vka = cathode to anode voltage

ASSP - SMPS for PCs

P/N	Supply Range (V)	Description	Package
TSM111	15 to 36	3.3, 5, 12V Triple over voltage controller and over current protection	DIP-20 SO-20
TSM112	4.5 to 24	3.3, 5, 12V Triple over / under voltage controller	DIP-14 SO-14
TSM121	14 to 24	3.3, 5, 12V Triple over / under voltage controller and over current protection +PWM	DIP-24 shrink

Single Transistor Forward Converter





Diodes	D1	D2
$I_{F(av)}$	$I_{out} * \delta_{max}$	$I_{out} * (1-\delta_{min})$
$V_{RRM} \geq$	$V_{in(max)} \frac{N_s}{N_d}$ - V_F + spike voltage	$V_{in(max)} \frac{N_s}{N_p}$ - V_F + spike voltage

Transistors	
$BV_{CEO} \geq$	$1.2 * V_{in(max)}$
BV_{CER} or $BV_{DSS} \geq$	$V_{in(max)} * 1/(1-\delta_{(max)}) +$ spike voltage
$I_{C(max)}$ or $I_{D(max)} \geq$	$\frac{1.2 * P_{out}}{\eta V_{in(min)} \delta_{max}}$

Power MOSFETs

OUTPUT POWER

AC	50W	100W	150W	250W	Package
120V	STD2NC45-1				IPAK
		STP5NB40/FP	STP7NK40Z/FP	STP11NB40/FP	TO-220/FP
				STP11NC40/FP	
220V	STP3NC60/FP	STP4NC60/FP	STP4NC60/FP	STP6NC60/FP	TO-220/FP
	STP3NK60Z/FP	STP5NK60Z/FP	STP5NK60Z/FP	STP5NK60Z/FP	
	STP3NC70Z/FP	STP5NC70Z/FP	STP5NC70Z/FP	STP9NK60Z/FP	
	STP3NB80/FP	STP4NC80Z/FP	STP4NC80Z/FP	STP7NC70Z/FP	
	STP3NC90Z/FP	STP4NB90/FP	STP5NK80Z/FP	STP7NC80Z/FP	
			STP5NC90Z/FP	STP7NK80Z/FP	
				STP6NC90Z/FP	

Power Bipolar Transistors

OUTPUT POWER

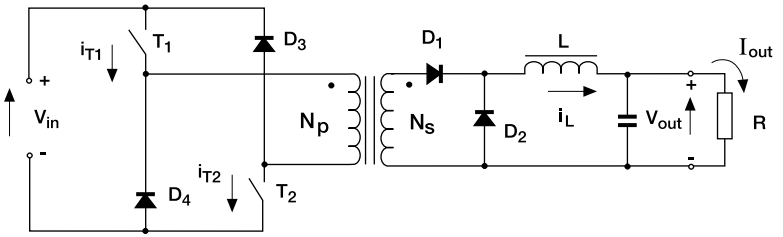
AC	75W	100W	150W	200W	Package
220V	BUL742A	BUL310	BUF405A		TO-220
				BUF410A/BUL810	SOT-93 (TO-218)
		BUL310FP			TO-220FP

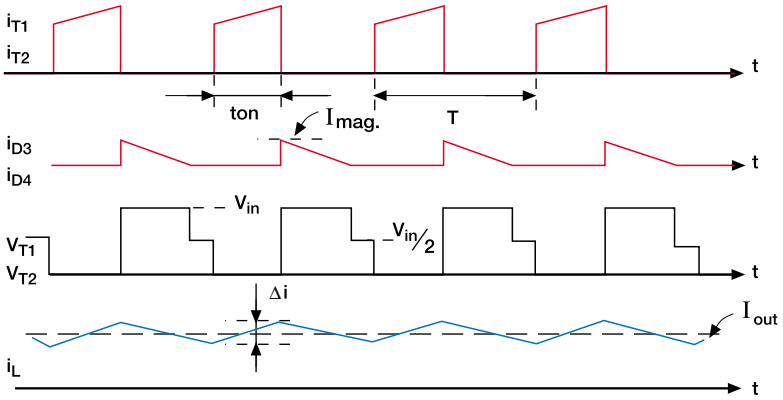
Rectifiers

OUTPUT VOLTAGE

I_{out}	3.3V	5V	12V	24V	36/48V	Package
0.5A	STPS1L30A,U 1N5818 1N5821	STPS1L30A,U STPS160A,U 1N5819	STPS1H100A,U	BYW100-200 STPS1H100A,U	BYW100-200 STPR120A	DO-15 DO-41 SMA SMB
1A	STPS2L30A,U 1N5821	STPS3L60,S 1N5822	STPS2H100A,U	STPS2H100A,U	BYW98-200	DO-41 DO-201AD SMA SMB SMC
3A	STPS640CF,CT STPS8L30B	STPS745D,FP,G	STPS660CB	STPS5H100B STPS8H100D,FP	STTH803D	DPAK D^2PAK ISOWATT220 TO-220 TO-220FP
5A	STPS8L30B STPS10L25D	STPS1045B,D,FP STPS10L45CFP,CT STPS10L60CFP	STPS8H100D,FP STPS10H100CFP,CT STPS10150CT	STPS10150CT STPR1020CT	STTH803D,G	DPAK D^2PAK TO-220 TO-220FP
10A	STPS15L25D,G STPS20L25D,G	STPS2045CFP,CT STPS20L45CFP,CT STPS20L60CT	STPS20H100CFP, CG,CT STPS20150CT	STPR1620CT STPS20H100CFP CG,CT STPS20150CT	STTH30R03CW STTH2003CR,CT	D^2PAK I^2PAK TO-220 TO-220FP TO-247
20A	STPS20L25CG,CT STPS30L30CR,CT	STPS4045CP,CW STPS40L45CT,CW	STPS30H100CW	STPS30150CT,CW		D^2PAK I^2PAK SOT-93 TO-220 TO-247
30A	STPS30L30CG, CR,CT STPS60L30CW	STPS6045CP,CPI,CW STPS60L45CW STPS80L60CY	STPS80H100CY,TV STPS160H100TV			D^2PAK I^2PAK ISOTOP Max247 SOT-93 TO-247 TOP3 Ins

Two Transistor Forward Converter





$$\delta = \frac{ton}{T} \qquad f = \frac{1}{T}$$

η = EFFICIENCY

L_p = PRIMARY INDUCTANCE

Diodes	D1	D2
$I_{F(av)}$	$I_{out} * \delta_{max}$	$I_{out} * (1 - \delta_{min})$
V_{RRM}	$V_{in(max)} \frac{N_s}{N_p}$ - V_F + spike voltage	$V_{in(max)} \frac{N_s}{N_p}$ - V_F+ spike voltage

Transistors	
BV_{CEO} or $BV_{DSS} \geq$	$1.1 * V_{in(max)}$
$I_{C(max)}$ or $I_{D(max)}$	$\frac{1.2 * P_{out}}{\eta V_{in(min)} \delta_{max}}$

Power MOSFETs

OUTPUT POWER

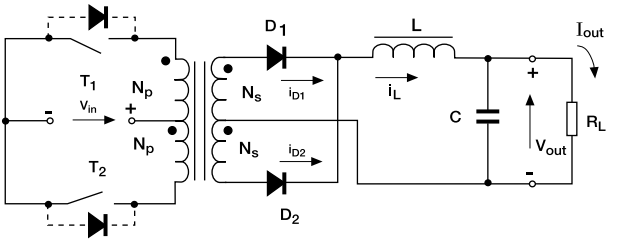
AC	100W	200W	300W	500W	Package
120V	STP11NC40/FP	STP11NC40/FP			TO-220/FP
	STP5NK50Z/FP		2xSTP11NC40/FP		
	STP8NC50/FP		STP12NM50/FP		
				STU26NM50	Max220
		STW14NK50Z	STW20NK50Z	STW45NM50	TO-247
		STW14NC50			
220V	STP4NC50/FP	STP11NM60/FP	STP12NM50/FP	STP12NM50/FP	TO-220/FP
	STP5NK50Z/FP			STP20NM50/FP	
	STP3NC60/FP				
	STP3NK60Z/FP				
			STW14NM50	STW14NK50Z	TO-247
			STW14NK50Z	STW20NC50	
				STU16NC50	Max220

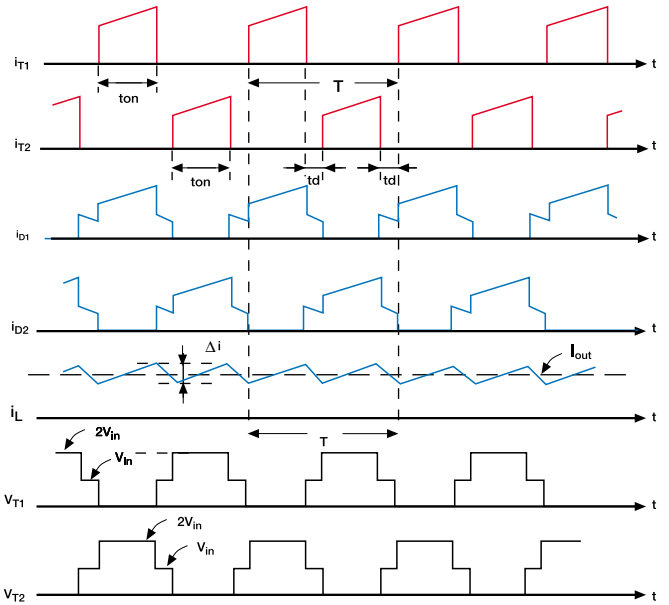
Rectifiers

OUTPUT VOLTAGE

I_{out}	3.3V	5V	12V	24V	36/48V	Package
0.5A	STPS1L30A,U 1N5818 1N5821	STPS1L30A,U STPS160A,U 1N5819	STPS1H100A,U	BYW100-200 STPS1H100A,U	BYW100-200 STPR120A	DO-15 DO-41 DO-201AD SMA SMB
1A	STPS2L30A,U 1N5821	STPS3L60,S 1N5822	STPS2H100A,U	STPS2H100A,U	BYW98-200	DO-201AD SMA SMB SMC
3A	STPS640CF,CT STPS8L30B	STPS745D,FP,G	STPS660CB	STPS5H100B STPS8H100D,FP	STTH803D	DPAK D^2PAK ISOWATT220 TO-220 TO-220FP
5A	STPS8L30B STPS10L25D	STPS1045B,D,FP STPS10L45CFP,CT STPS10L60CFP	STPS8H100D,FP STPS10H100CFP,CT STPS10150CT	STPS10150CT STPR1020CT	STTH803D,G	DPAK D^2PAK TO-220 TO-220FP
10A	STPS15L25D,G STPS20L25D,G	STPS2045CFP,CT STPS20L45CFP,CT STPS20L60CT	STPS20H100CFP, CG,CT STPS20150CT	STPR1620CT STPS20H100CFP CG,CT STPS20150CT	STTH30R03CW STTH2003CR,CT	D^2PAK I^2PAK TO-220 TO-220FP TO-247
20A	STPS20L25CG,CT STPS30L30CR,CT	STPS4045CP,CW STPS40L45CT,CW	STPS30H100CW	STPS30150CT,CW	STTH2003CR,CT	D^2PAK I^2PAK SOT-93 TO-220 TO-247
30A	STPS30L30CG, CR,CT STPS60L30CW	STPS6045CP,CPI,CW STPS60L45CW STPS80L60CY	STPS80H100CY,TV STPS160H100TV	STPS30150CT,CW	STTH6003CW,TV1	D^2PAK I^2PAK ISOTOP Max247 SOT-93 TO-247 TOP3 Ins

Push-pull Converter





$$\delta = \frac{ton}{T}$$

η = EFFICIENCY

Diodes	D1 and D2
$I_{F(av)}$	$^1/_2 * Iout$
$V_{RRM} \geq$	$2 * V_{in(max)} \frac{N_s}{N_p} - V_F$ + spike voltage

Transistors	
$BV_{CEO} \geq$	$1.1 * V_{in\ (max)}$
$BV_{CER\ (min)}$ or $BV_{DSS} \geq$	$2 * V_{in\ (max)}$ + spike voltage
$I_{C\ (max)}$ or $I_{D(max)} \geq$	$\frac{P_{out}}{\eta V_{in\ (min)} \delta_{max}}$

Power MOSFETs

OUTPUT POWER

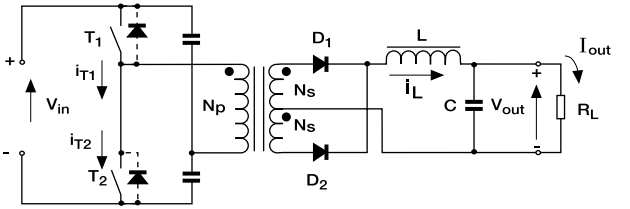
AC	100W	200W	300W	500W	Package
120V			STP6NK60Z/FP		TO-220/FP
	STP4NC50/FP	STP5NK50Z/FP	STP6NC60/FP		
	STP5NK50Z/FP	STP5NC50/FP	STP9NK60Z/FP		
	STP3NC60/FP	STP6NK60Z/FP	STP13NK60Z/FP		
	STP3NK60Z/FP	STP6NC60/FP			
		STP9NK60Z/FP			
				STW13NK60Z	TO-247
				STU11NC60	Max220
220V	STP3NC70Z/FP	STP3NC70Z/FP	STP5NC70Z/FP	STP6NC90Z/FP	TO-220/FP
	STP3NB80Z/FP	STP4NC80Z/FP	STP5NK80Z/FP		
	STP3NC90Z/FP	STP3NC90Z/FP	STP6NC80Z/FP		
			STW6NC90Z	STW8NC90Z	TO-247
				STU8NC90Z	Max220
				STU7NB90	

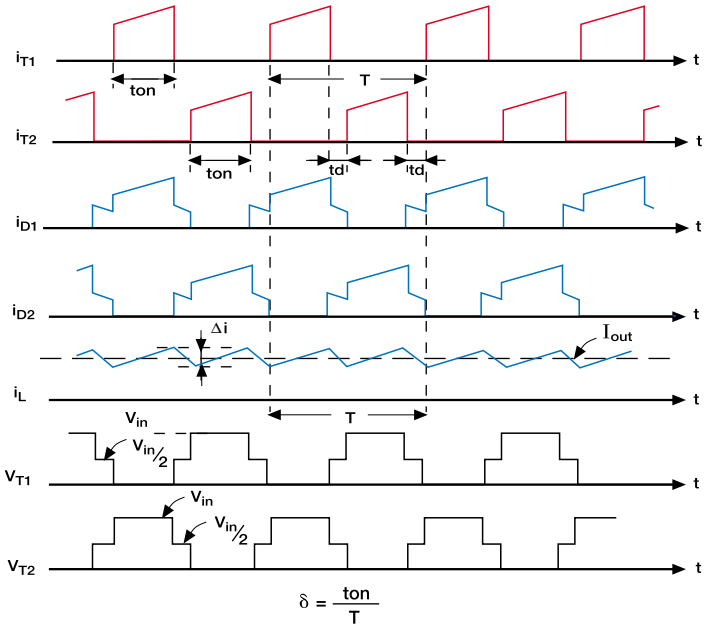
Rectifiers

OUTPUT VOLTAGE

I_{out}	3.3V	5V	12V	24V	36/48V	Package
0.5A	STPS1L30A,U 1N5818 1N5821	STPS1L30A,U STPS160A,U 1N5819	STPS1H100A,U	BYW100-200 STPS1H100A,U	BYW100-200 STPR120A	DO-15 DO-41 DO-201AD SMA SMB
1A	STPS2L30A,U 1N5821	STPS3L60,S 1N5822	STPS2H100A,U	STPS2H100A,U	BYW98-200	DO-201AD SMA SMB SMC
3A	STPS640CF,CT STPS8L30B	STPS745D,FP,G	STPS660CB	STPS5H100B STPS8H100D,FP	STTH803D	DPAK D^2PAK ISOWATT220 TO-220 TO-220FP
5A	STPS8L30 STPS10L25D	STPS1045B,D,FP STPS10L45CFP,CT STPS10L60CFP	STPS8H100D,FP STPS10H100CFP,CT STPS10150CT	STPS10150CT STPR1020CT	STTH803D,G	DPAK D^2PAK TO-220 TO-220FP
10A	STPS15L25D,G STPS20L25D,G	STPS2045CFP,CT STPS20L45CFP,CT STPS20L60CT	STPS20H100CFP, CG,CT STPS20150CT	STPR1620CT STPS20H100CFP,T CG,CT STPS20150CT	STTH30R03CW STTH2003CR,CT	D^2PAK I^2PAK TO-220 TO-220FP TO-247
20A	STPS20L25CG,CT STPS30L30CR,CT	STPS4045CP,CW STPS40L45CT,CW	STPS30H100CW	STPS30150CT,CW	STTH2003CR,CT	D^2PAK I^2PAK SOT-93 TO-220 TO-247
30A	STPS30L30CG, CR,CT STPS60L30CW	STPS6045CP,CPI,CW STPS60L45CW STPS80L60CY	STPS80H100CY,TV STPS160H100TV		STTH6003CW,TV1	D^2PAK I^2PAK, ISOTOP Max247 SOT-93 TO-247 TOP3 Ins

Half Bridge Converter





$$\delta = \frac{ton}{T}$$

η = EFFICIENCY

Diodes	D1 and D2
$I_{F(av)}$	$1/2 * Iout$
$V_{RRM} \geq$	$V_{in(max)} \frac{N_s}{N_p} - V_F$ + spike voltage

Transistors	
BV_{CEO} or $BV_{DSS} \geq$	$1.1 * V_{in(max)}$
$I_{C(max)}$ or $I_{D(max)} \geq$	$\frac{2 * P_{out}}{\eta V_{in(min)} \delta max}$

Power Bipolar Transistors

OUTPUT POWER

AC	200W	300W	Package
220V	ST13007D	BUL8	TO-220

Power MOSFETs

OUTPUT POWER

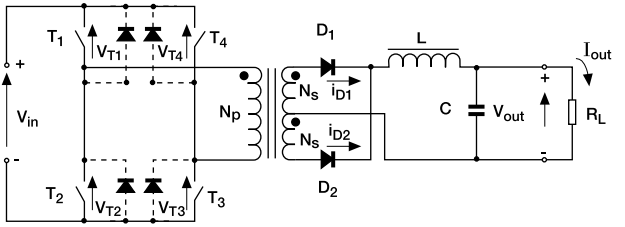
AC	250W	500W	750W	1000W	Package
120V	2xSTP11NB40/FP		2xSTP20NM50/FP	2xSTP20NM50/FP	TO-220/FP
	STP12NM50/FP				
	STW14NM50	2xSTW15NB50	2xSTW14NK50Z	2xSTW20NB50	TO-247
	STW14NK50Z	2xSTW14NK50Z	2xSTW15NB50	2xSTW20NK50Z	
		STW45NM50	STW45NM50	STW45NM50	
	STU16NB50	STU26NNM50	STU26NM50	STU26NM50	Max220
				STY34NB50F	Max247
				STY60NM50	
				STY60NM50FD	
			STE48NM50	STE48NM50	ISOTOP
				STE48NM50FD	
220V	STP9NB60/FP	STP14NK50Z/FP	STP20NM50/FP		TO-220/FP
	STP9NK60Z/FP				
	STP13NK60Z/FP				
		STW14NK50Z	STW14NM50	STW45NM50	TO-247
		STW15NB50		STW45NM50FD	
		STW13NB60			
		STW13NK60Z			
		STU16NB50	STU16NB50	STU26NM50	Max220
		STU11NB60		STU26NM50FD	
				STY34NB50F	Max247
				STY60NM50	
				STY60NM50FD	
				STE48NM50	ISOTOP
				STE48NM50FD	
380V	STP5NC70Z/FP	STP7NK80Z/FP			TO-220/FP
	STP5NB80/FP				
	STP5NK80Z/FP				
	STP4NC80Z/FP				
	STP6NB90/FP				
	STP6NC90Z/FP				
		STW8NC70Z	STW9NB90	STW9NB90	TO-247
		STW7NK80Z	STW8NC90Z	STW8NC90Z	
		STW7NB80			
		STW7NC80Z			
		STW6NB90			
		STW7NC90Z			
			STU8NB90	STU8NB90	Max220
			STU8NC90Z	STU8NC90Z	

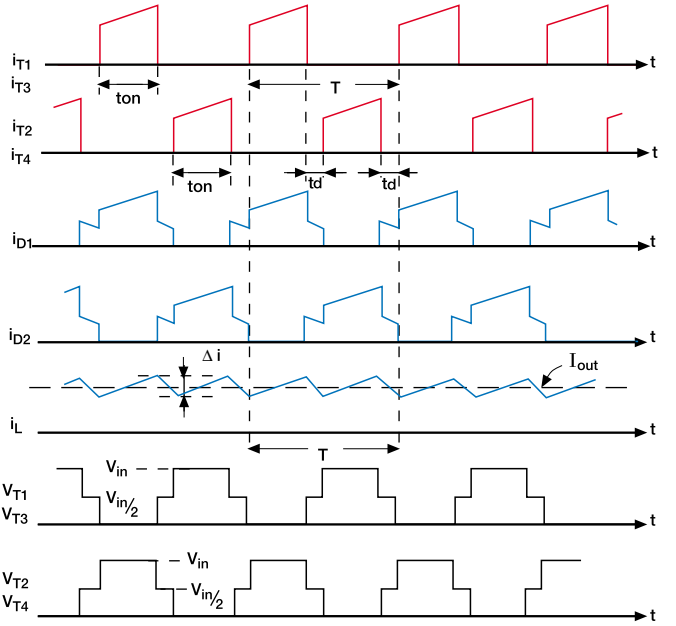
Rectifiers

OUTPUT VOLTAGE

I_{out}	3.3V	5V	12V	24V	36/48V	Package
0.5A	STPS1L30A,U 1N5818 1N5821	STPS1L30A,U STPS160A,U 1N5819	STPS1H100A,U	BYW100-200 STPS1H100A,U	BYW100-200 STPR120A	DO-15 DO-41 DO-201AD SMA SMB
1A	STPS2L30A,U 1N5821	STPS3L60,S 1N5822	STPS2H100A,U	STPS2H100A,U	BYW98-200	DO-201AD SMA SMB SMC
3A	STPS640CF,CT STPS8L30B	STPS745D,FP,G	STPS660CB	STPS5H100B STPS8H100D,FP	STTH803D	DPAK D^2PAK ISOWATT220 TO-220 TO-220FP
5A	STPS8L30 STPS10L25D	STPS1045B,D,FP STPS10L45CFP,CT STPS10L60CFP	STPS8H100D,FP STPS10H100CFP,CT STPS10150CT	STPS10150CT STPR1020CT	STTH803D,G	DPAK D^2PAK TO-220 TO-220FP
10A	STPS15L25D,G STPS20L25D,G	STPS2045CFP,CT STPS20L45CFP,CT STPS20L60CT	STPS20H100CFP, CG,CT STPS20150CT	STPR1620CT STPS20H100CFP, CG,CT STPS20150CT	STTH30R03CW STTH2003CR,CT	D^2PAK I^2PAK TO-220 TO-220FP TO-247
20A	STPS20L25CG,CT STPS30L30CR,CT	STPS4045CP,CW STPS40L45CT,CW	STPS30H100CW	STPS30150CT,CW	STTH2003CR,CT	D^2PAK I^2PAK SOT-93 TO-220 TO-247
30A	STPS30L30CG, CR,CT STPS60L30CW	STPS6045CP,CPI,CW STPS60L45CW STPS80L60CY	STPS80H100CY,TV STPS160H100TV		STTH6003CW,TV1	D^2PAK I^2PAK ISOTOP Max247 SOT-93 TO-247 TOP3 Ins

Full Bridge Converter





$$\delta = \frac{ton}{T}$$

η = EFFICIENCY

Diodes	D1 and D2
$I_{F(av)}$	$\frac{1}{2} * I_{out}$
$V_{RRM} \geq$	$2 * V_{in(max)} \frac{N_s}{N_p} - V_F$ + spike voltage

Transistors	
BV_{CEO} or $BV_{DSS} \geq$	$1.1 * V_{in(max)}$ + spike voltage
$I_{C(max)}$ or $I_{D(max)} \geq$	$\frac{P_{out}}{\eta V_{in(min)} \delta_{max}}$

Power MOSFETs

OUTPUT POWER

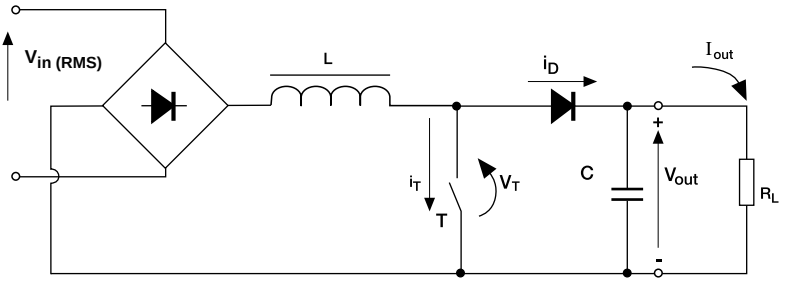
AC	250W	500W	750W	1000W	Package
120V	2xSTP11NB40/FP				TO-220/FP
	STP12NM50/FP				
	STW14NM50	2xSTW15NB50	2xSTW15NB50	2xSTW20NB50	TO-247
		2xSTW14NK50Z	2xSTW14NK50Z	2xSTW20NK50Z	
		STW45NM50	STW45NM50	STW45NM50	
		STU26NM50	STU26NM50	STU26NM50	Max220
				STY34NB50F	Max247
				STY60NM50	
				STY60NM50FD	
				STE48NM50	ISOTOP
				STE48NM50FD	
220V	STP8NC50/FP				TO-220/FP
	STP10NK60Z/FP				
	STP13NK60Z/FP				
		STW14NK50Z	STW14NK50Z	STW45NM50	TO-247
		STW15NB50	STW15NB50		
		STW13NK60Z	STW20NM50		
		STU13NB50	STU13NB50	STU26NM50	Max220
		STU13NC50			
		STU11NB60			
		STU11NC60			
				STY34NB50F	Max247
				STE48NM50	ISOTOP
				STE48NM50FD	
				STE70NM50	
380V	STP5NC70Z/FP				TO-220/FP
	STP5NB80/FP				
	STP5NK80Z/FP				
	STP4NC80Z/FP				
	STP6NB90/FP				
	STP6NC90Z/FP				
		STW8NC70Z	STW9NB90	STW9NB90	TO-247
		STW7NB80	STW8NC90Z	STW8NC90Z	
		STW7NC80Z			
		STW7NK80Z			
		STW6NB90			
		STW7NC90Z			
			STU8NB90	STU8NB90	Max220
			STU8NC90Z	STU8NC90Z	

Rectifiers

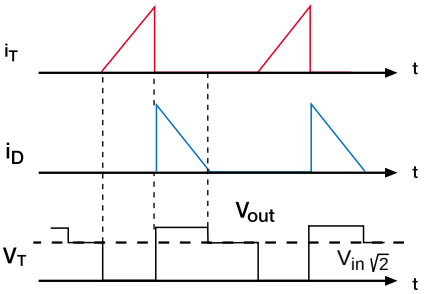
OUTPUT VOLTAGE

I_{out}	3.3V	5V	12V	24V	36/48V	Package
0.5A	STPS1L30A,U 1N5818 1N5821	STPS1L30A,U STPS160A,U 1N5819	STPS1H100A,U			DO-15 DO-41 DO-201AD SMA SMB
1A	STPS2L30A,U 1N5821	STPS3L60,S 1N5822	STPS2H100A,U			DO-201AD SMA SMB SMC
3A	STPS640CF,CT STPS8L30B	STPS745D,FP,G	STPS660CB	STPS5H100B STPS8H100D,FP	STTH803D	DPAK D^2PAK ISOWATT220 TO-220 TO-220FP
5A	STPS8L30B STPS10L25D	STPS1045B,D,FP STPS10L45CFP,CT STPS10L60CFP	STPS8H100D,FP STPS10H100CFP,CT STPS10150CT	STPS10150CT STPR1020CT	STTH803D,G	DPAK D^2PAK TO-220 TO-220FP
10A	STPS15L25D,G STPS20L25D,G	STPS2045CFP,CT STPS20L45CFP,CT STPS20L60CT	STPS20H100CFP, CG,CT STPS20150CT	STPR1620CT STPS20H100CFP, CG,CT STPS20150CT	STTH30R03CW STTH2003CR,CT	D^2PAK I^2PAK TO-220 TO-220FP TO-247
20A	STPS20L25CG,CT STPS30L30CR,CT	STPS4045CP,CW STPS40L45CT,CW	STPS30H100CW	STPS30150CT,CW	STTH2003CR,CT	D^2PAK I^2PAK SOT-93 TO-220 TO-247
30A	STPS30L30CG, CR,CT STPS60L30CW	STPS6045CP,CPI,CW STPS60L45CW STPS80L60CY	STPS80H100CY,TV STPS160H100TV		STTH6003CW,TV1	D^2PAK I^2PAK ISOTOP Max247 SOT-93 TO-247 TOP3 Ins

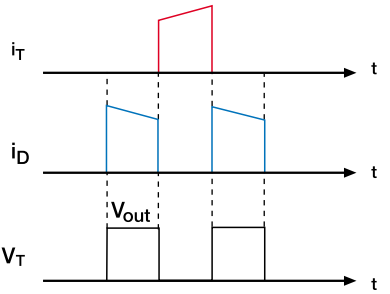
PFC Converter



Discontinuous Mode



Continuous Mode



Diodes	Discontinuous and Continuous Mode
$I_{F(av)}$	I_{out}
$V_{RRM} \geq$	V_{out} + spike voltage

Transistors	Discontinuous Mode	Continuous Mode
BV_{CEO} or $BV_{DSS} \geq$	$1.1 * V_{in(max)}$ + spike voltage	$1.1 * V_{in(max)}$ + spike voltage
$I_{C(max)}$ or $I_{D(max)} \geq$	$\frac{2\sqrt{2}\,P_{out}}{V_{in\,(RMS)}} \sqrt{\frac{1}{6} - \frac{4\sqrt{2}}{9\pi}\frac{V_{in\,(RMS)}}{V_{out}}}$	$I_{out}\sqrt{\frac{16}{3\pi\sqrt{2}}\frac{V_{out}}{V_{in\,(RMS)}} - 1}$

Power MOSFETs

OUTPUT POWER

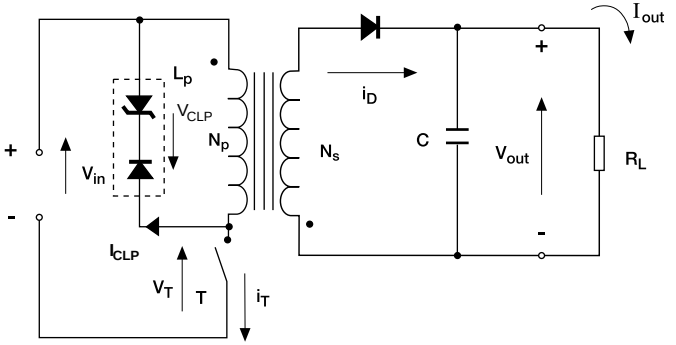
AC	50W	100W	150W	200/250W	Package
120V	STP5NC50/FP	STP5NC50/FP	STP8NC50/FP		TO-220/FP
	STP5NK50Z/FP	STP5NK50/FP	STP9NB50/FP		
	STP4NC60/FP	STP4NC60/FP			
	STP4NK60Z/FP	STP4NK60Z/FP			
			STW14NB50	STW14NM50	TO-247
			STW14NC50		
220V	STP3NC60/FP	STP4NC60/FP	STP6NC60/FP		TO-220/FP
	STP3NK60Z/FP	STP4NK60Z/FP	STP6NK60Z/FP		
	STP3NC70Z/FP	STP5NC70Z/FP	STP10NK60Z/FP		
	STP3NB80/FP	STP4NC80Z/FP	ST13NK60Z/FP		
	STP3NC90Z/FP	STP5NK80Z/FP	STP8NC70Z/FP		
		STP5NC90Z/FP	STP7NC80Z/FP		
			STP7NK80Z/FP		
			STP6NC90Z/FP		
				STW10NC60	TO-247
				STW10NK60Z	
				STW13NK60Z	
				STW10NC70Z	
				STW9NC80Z	
				STW9NB90	
				STW8NC90Z	

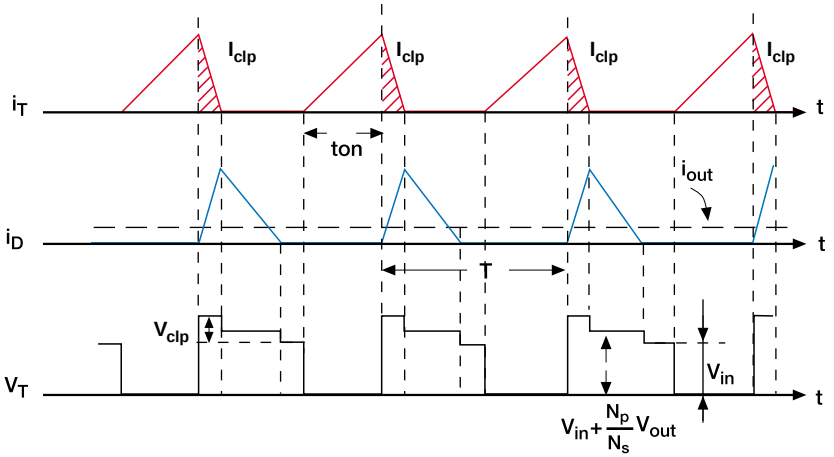
Rectifiers

600V

	Discontinuous Mode	Continuous Mode	Package
<100W	STTH1L06		DO-41
200W	STTH3L06 STTH5L06	STTH5R06D,FP	DO-201AD TO-220FP
400W	STTH5L06 STTH8L06D, FP	STTH8R06D,FP STTH806TTI	DO-201AD TO-220 TO-220FP
600W		STTH8R06D,FP STTH806TTI STTH12R06D,FP	TO-220 TO-220FP
1000W		STTH8006TTI STTH12R06D,FP STTH15R06D,FP	TO-220 TO-220FP
2000W		STTH15R06D,FP	TO-220 TO-220FP
3000W		STTH30R06CW	TO-247

Single Transistor Flyback Converter





Diode	
$I_{F(av)}$	I_{out}
$V_{RRM} \geq$	$V_{out} + \frac{N_S}{N_P} V_{in\,(max)}$ + spike voltage

Transistor	
$BV_{CEO} \geq$	$1.2 * V_{in(max)}$
BV_{CER} or $BV_{DSS} \geq$	$V_{in\,(max)} + (N_p/N_s)\,V_{out}$ + (leakage inductance spike)
$I_{C\,(max)}$ or $I_{D\,(max)} \geq$	$\frac{2 * P_{out}}{\eta V_{in\,(min)} \delta_{max}}$

VIPower

OUTPUT POWER

AC	5W	10W	20W	50W	100W	Package
120V	VIPer12AS					SO-8
	VIPer12ADIP	VIPer20DIP				DIP-8
		VIPer20(022Y)	VIPer50(022Y)	VIPer100(022Y)		PENTAWATT-HV
		VIPer20SP	VIPer50SP	VIPer100SP		PowerSO-10
220V		VIPer12AS				SO-8
		VIPer12ADIP	VIPer20DIP			DIP-8
			VIPer20(022Y)	VIPer50(022Y)	VIPer100(022Y)	PENTAWATT-HV
			VIPer20SP	VIPer50SP	VIPer100SP	PowerSO-10

VIPer is a monolithic Smart Solution that includes a controller and Power MOSFET in the same chip

Power Bipolar Transistors

OUTPUT POWER

AC	6W	10W*	20W	75W	100W	Package
220V	STBV42	STBV32				TO-92
		ST13003	BULT118			SOT-32
			BUXD87T4			DPAK
		STD13003-1	STD616A-1			IPAK
				BUL742A	BUL510	TO-220

* Self-oscillating

Rectifiers

OUTPUT VOLTAGE

I_{out}	3.3V	5V	12V	24V	36/48V	150V	Package
0.5A	STPS1L30A,U 1N5818 1N5821	STPS1L30A,U 1N5819 STPS160A,U	STPS1H100A,U BYW100-200	BYW100-200 STPS1H100U	BYW100-200 STPR120A	BYT01-400 STTA106,U STTH1L06	DO-15 DO-41 SMA SMB
1A	STPS2L30A,U 1N5821	STPS3L60,S 1N5822	STPS2H100A,U	STPS2H100A,U	BYW98-200	STTH1L06 STTH306	DO-15 DO-41 DO-201AD SMA SMB SMC
3A	STPS640CF,CT STPS8L30B	STPS745D,FP,G	STPS660CB	STPS5H100B STPS8H100D,FP	STPR520FP STTH803D	STTH5L06	DPAK D^2PAK DO-201AD ISOWATT220 TO-220 TO-220FP
5A	STPS8L30B STPS10L25D	STPS1045B,D,FP STPS10L45CFP,CT STPS10L60CFP	STPS8H100D,FP STPS10H100CFP,CT STPS10150CT	STPS10150CT STPR1020CT	STTH803D,G		DPAK D^2PAK TO-220 TO-220FP
10A	STPS15L25D,G STPS20L25D,G	STPS2045CFP,CT STPS20L45CFP,CT STPS20L60CT	STPS20H100CFP, CG,CT STPS20150CT	STPR1620CT STPS20H100, CFP,CG,CT STPS20150CT			D^2PAK TO-220 TO-220FP
20A	STPS20L25CG,CT STPS30L30CR,CT	STPS4045CP,CW STPS40L45CT,CW	STPS30H100CW				D^2PAK I^2PAK TO-220 SOT-93 TO-247
30A	STPS60L30CW	STPS6045CP,CPI,CW STPS60L45CW STPS80L60CY					Max247 SOT-93 TO-247 TOP3 Ins

Single Transistor Flyback Converter

Power MOSFETs

OUTPUT POWER

AC	<20W	30W	50W	100W	150W	200/250W	Package
120V	STN1NC60						SOT-223
	STD1LNC60/-1	STD1HNC60/-1					DPAK / IPAK
	STD1NC60/-1	STD2NC60/-1					
		STD3NK60Z/-1					
		STD3NC60					
	STS1NC60						SO-8
	STQ1NC60						TO-92
		STP2NC60/FP	STP5NC50/FP	STP5NC50/FP	STP8NC50/FP	STP12NM50/FP	TO-220 / FP
		STP2HNC60/FP	STP5NK50Z/FP	STP5NK50Z/FP	STP8NM50/FP	STP20NM50/FP	
		STP3NC60/FP	STP4NC60/FP	STP4NC60/FP	STP14NK50Z/FP		
		STP3NK60Z/FP	STP5NK60Z/FP	STP5NK60Z/FP			
				STP8NK65Z/FP			
				STL5NK65Z			PowerFLAT
					STU13NC50	STU16NC50	Max220
					STW14NC50	STW14NM50	TO-247
					STW14NK50Z		
220V	STN1NB80						SOT-223
	STD1NB80/-1						DPAK / IPAK
	STQ1NB80						TO-92
			STP3NC60/FP	STP4NC60/FP	STP6LNC60/FP	STP9NC60/FP	TO-220 / FP
			STP3NK60Z/FP	STP4NK60Z/FP	STP6NC60/FP	STP13NK60Z/FP	
			STP3NC70Z/FP	STP5NC70Z/FP	STP6NK60Z/FP	STP11NM60/FP	
			STP3NB80/FP	STP4NC80Z/FP	STP8NC60/FP	STP20NM60/FP	
			STP3NC90Z/FP	STP5NC90Z/FP	STP8NC70Z/FP	STP10NK80Z/FP	
				STP5NK80Z/FP	STP7NC80Z/FP		
					STP7NK80Z/FP		
					STP9NK70Z/FP		
					STP6NC90Z/FP		
					STP8NM60/FP		
				STL5NK65Z			PowerFLAT
						STU16NC60	Max220
						STU9NC80Z	
						STW10NC60	TO-247
						STW13NK60	
						STW10NC70Z	
						STW10NK80Z	
						STW9NC80Z	
						STW9NB90	
						STW8NC90Z	

Protection - Peakclamp

MAIN PARAMETERS

P / N	P_{p} (10/1000µs) (W)	V_{BR} (V)	V_{RRM} (V)	T_{J} max (C)	Package
PKC - 136	600	160	700	150	DO-15

SMPS Packages

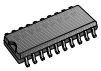

SOT23-5L


SOT-223


SO-8


SO-14


SO-16

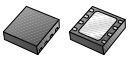

SO-20


SMA


SMB (SOD6)

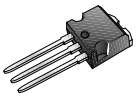

SMC (SOD15)


GBU


PowerFLAT


DPAK


IPAK

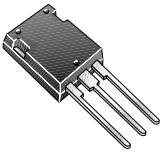

I^2PAK


D^2PAK

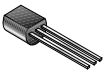

PowerSO-10


TSSOP8


Max220


Max247

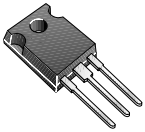

ISOWATT220


TO-92

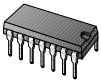

TO-218


TO-220


TO-220FP / AB


TO-247


DIP-8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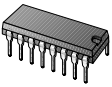
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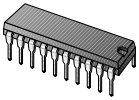
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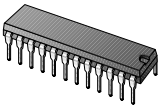
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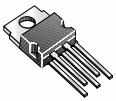
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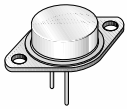
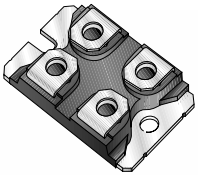
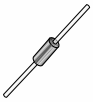

TO-3


ISOTOP


DO-15


DO-41


DO-201AD

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