

Fast Recovery/Schottky Diodes

Product Line Card

Fast Recovery Diodes (FRDs)

Fairchild's broad portfolio of Fast Recovery Diodes has been specifically designed to address Ultra Fast Soft Recovery, high-speed and high-voltage design requirements for power switching applications.

Applications include:

- Power Switching Circuits
- Switching Mode Power Supply
- Freewheeling Diodes
- Damper & Modulation Diode
- Power Factor Correction
- RCD Snubber Circuits

Schottky Barrier Diodes (SBDs)


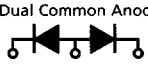
Fairchild's Schottky Barrier Diodes feature low power loss and high-speed rectification characteristics for applications where power saving is crucial. Choose from our SBD product family for all your battery driven designs such as cellular phones, pagers and portable PCs.

Applications include:

- Output Rectifiers

Family Specification Comparison

Fast Recovery Diodes (FRDs)

Chip Connection	Part Number	$V_{RRM}(V)$	$I_{F(AV)}(A)$	$V_{F(MAX)}(V)$	$t_{rr(MAX)}(ns)$	Package
 Single	FFPF06U20S	200	6	1.2	35	TO-220F
	FFPF10U20S		10	1.2	35	
	FFPF15U20S		15	1.2	40	
	FFPF20U20S		20	1.2	40	
	FFPF30U20S		30	1.2	40	
	FFPF04U40S	400	4	1.4	45	
	FFPF06U40S		6	1.4	50	
	FFPF10U40S		10	1.4	50	
	FFPF15U40S	15	1.4	50		
	FFPF20U40S	20	1.4	50		
	FFPF05U60S	600	5	2.3	80	
	FFPF10U60S		10	2.2	90	
	FFPF20U60S		20	2.2	90	
	FFPF30U60S	30	2.3	90		
	FFPF40U60S	40	2.1	110		
FFPF05U120S	1200	5	3.5	100		
FFPF10U120S		10	3.5	100		
FFPF15U120S		15	3.5	100		
FFB05U120S	1200	5	3.5	100	D ² -PAK	
FFB10U120S		10	3.5	100		
 Dual Common Anode	FFPF06U20DP	200	6	1.2	35	TO-220F
	FFPF10U20DP		10	1.2	35	
	FFPF15U20DP		15	1.2	40	
	FFPF04U40DP	400	4	1.4	45	
	FFPF06U40DP		6	1.4	50	

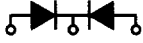
Note 1) *In development 2) V_F , I_F , rated per diode, at $T_C = 25^\circ C$ & each $I_{F(AV)}$ 3) t_{rr} condition of measurements: Each $I_{F(AV)}$ and $di/dt = 200A/\mu s$

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
Family Specification Comparison (continued)

Fast Recovery Diodes (FRDs continued)

Chip Connection	Part Number	V _{RRM} (V)	I _{F(AV)} (A)	V _{F(MAX)} (V)	t _{rr(MAX)} (ns)	Package	
 Dual Common Cathode	FFPF06U20DN	200	6	1.2	35	TO-220F	
	FFPF10U20DN		10	1.2	35		
	FFPF15U20DN		15	1.2	40		
	FFPF04U40DN	400	4	1.4	45		
	FFPF06U40DN		6	1.4	50		
	FFPF05U60DN	600	5	2.3	80		
	FFPF10U60DN		10	2.2	90		
	FFPF20U60DN		20	2.2	90		
	FFPF30U60DN		30	2.3	90		
	FFP06U20DN	200	6	1.2	35		TO-220
	FFP10U20DN		10	1.2	35		
	FFP15U20DN		15	1.2	40		
	FFP04U40DN	400	4	1.4	45		
	FFP06U40DN		6	1.4	50		
	FFP05U60DN	600	5	2.3	80		
	FFP10U60DN		10	2.2	90		
	FFP20U60DN		20	2.2	90		
	FFP30U60DN		30	2.3	90		
	FFAF15U20DN	200	15	1.2	40	TO-3PF	
	FFAF20U20DN		20	1.2	40		
	FFAF10U40DN	400	10	1.4	50		
	FFAF30U60DN		30	2.3	90		
	FFAF40U60DN	600	40	2.1	110		
	FFAF60U60DN		60	2.2	110		
	FFAF05U120DN	1200	5	3.5	100		
	FFAF10U120DN		10	3.5	100		
	FFAF15U120DN		15	3.5	100		
	FFAF20U120DN		20	3.5	120		
FFA15U20DN	200	15	1.2	40	TO-3P		
FFA20U20DN		20	1.2	40			
FFA30U20DN		30	1.2	40			
FFA10U40DN	400	10	1.4	50			
FFA15U40DN		15	1.4	50			
FFA20U40DN	600	20	1.4	50			
FFA30U60DN		30	2.3	90			
FFA40U60DN		40	2.1	110			
FFA60U60DN		60	2.2	110			
FFA05U120DN	1200	5	3.5	100			
FFA10U120DN		10	3.5	100			
FFA15U120DN		15	3.5	100			
FFA20U120DN		20	3.5	120			
FFL60U60DN	600	60	2.2	110	TO-264		
FFL20U120DN	1200	20	3.5	120			
FFL25U120DN		25	3.5	120			

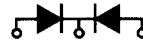
Notes 1) *In development 2) V_F, I_F, rated per diode, at T_C = 25°C & each I_{F(AV)} 3) t_{rr} condition of measurements: Each I_{F(AV)} and di/dt = 200A/μs

Damper Diodes and Damper & Modulation Diodes

Chip Connection	Part Number	V _{RRM} (V)	I _{F(AV)} (A)	V _{F(MAX)} (V)	t _{rr(MAX)} (ns)	Package	
 Single	FFPF04F150S	1500	4	1.6	170	TO-220F	
	FFPF04U150S			1.8	150		
	FFPF06F150S			6	1.6		170
	FFPF06U150S				1.8		150
	FFPF10F150S			10	1.6		170
	FFPF10U150S				1.8		150
	FFPF14U150S			14	1.8		150
	FFPF14X150S				2.4		120
	FFPF05U170S*	1700	5	1.8	150		
Dual Series	FFAF60A150DS	600, 1500	20, 6	2.2, 1.6	90, 170	TO-3PF	

Notes 1) *In development 2) V_F, I_F, rated per diode, at T_C = 25°C & each I_{F(AV)} 3) t_{rr} condition of measurements: I_F=1A and di/dt = 50A/μs for damper diode; I_F=20A and di/dt = 200A/μs for modulation diode

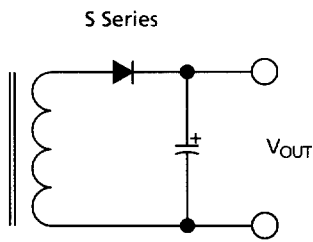
Schottky Barrier Diodes (SBDs)

Chip Connection	Part Number	V _{RRM} (V)	I _O (A)	I _{rr(MAX)} (mA)	I _{FSM} (A)	V _{F(MAX)} (V)	Package
 Dual Common Cathode	FYPF1004DN*	40	10	3.5	80	0.55	TO-220F
	FYPF1504DN*		15	5	100	0.55	
	FYPF2004DN*		20	5	150	0.55	
	FYAF3004DN*	40	30	10	300	0.55	TO-3PF
	FYPF2006DN	60	20	8	200	0.58	TO-220F
	FYPF1010DN	100	10	3	100	0.75	

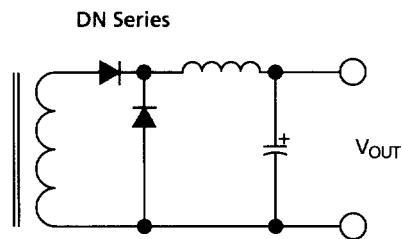
Note 1) *In development 2) I_{rr}, V_F, rated per diode, at T_C = 25°C and each I_{F(AV)} 3) I_{FSM} measurement condition: 60Hz single half sine-wave

Applications for SMPS

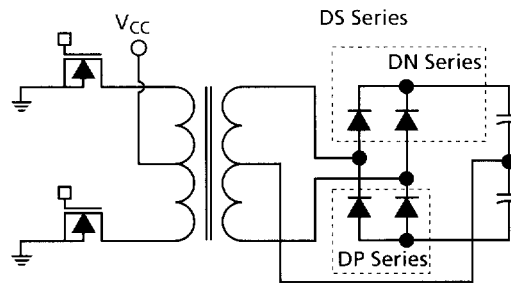
Single Flyback Type



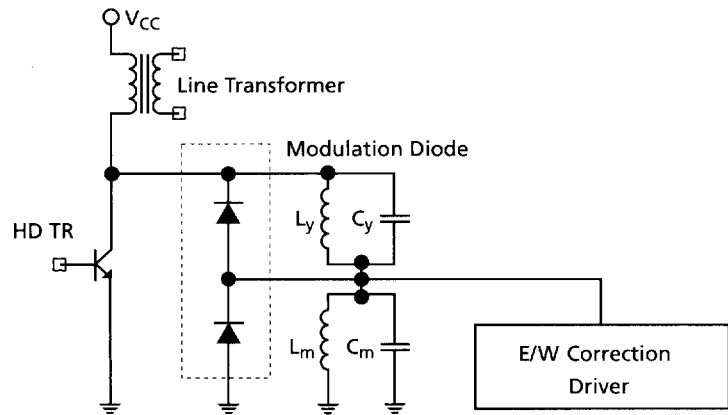
Single Forward Type



Applications for Push-Pull Converter for Car Amp

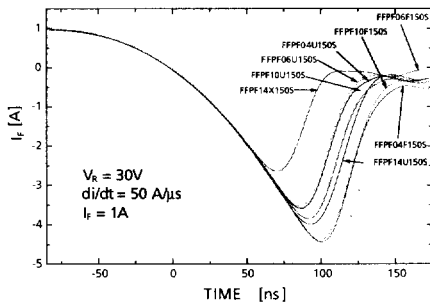


Applications for TV and Monitor

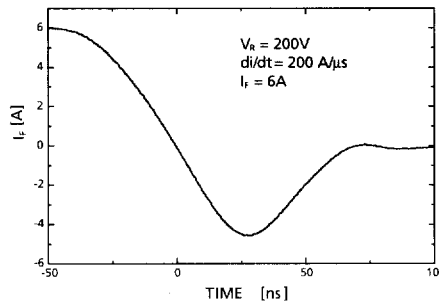


Characteristics

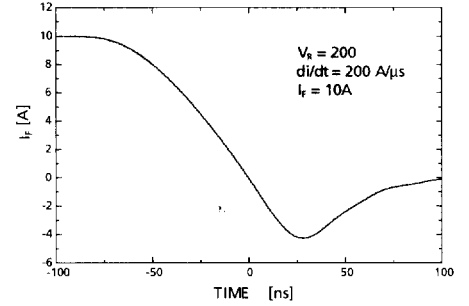
t_{rr} Waveform of Damper Diode



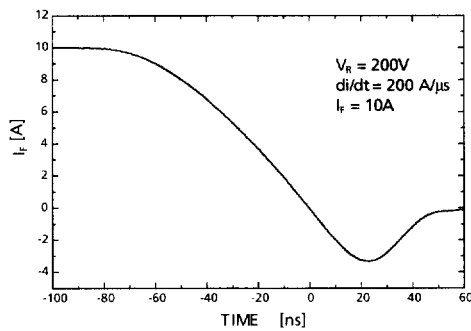
t_{rr} Waveform of Modulation Diode



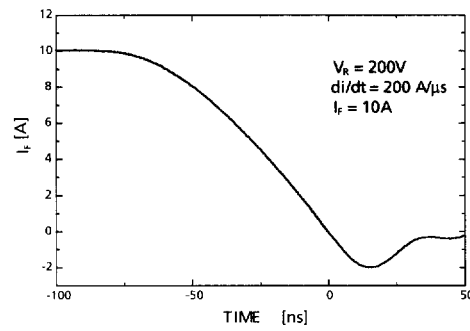
t_{rr} Waveform of FFPF10U60S



t_{rr} Waveform of FFPF10U40S

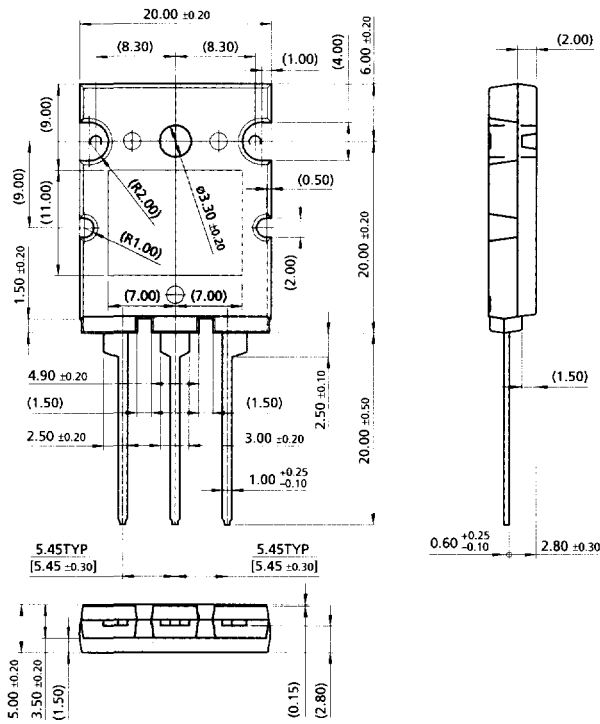


t_{rr} Waveform of FFPF10U20S

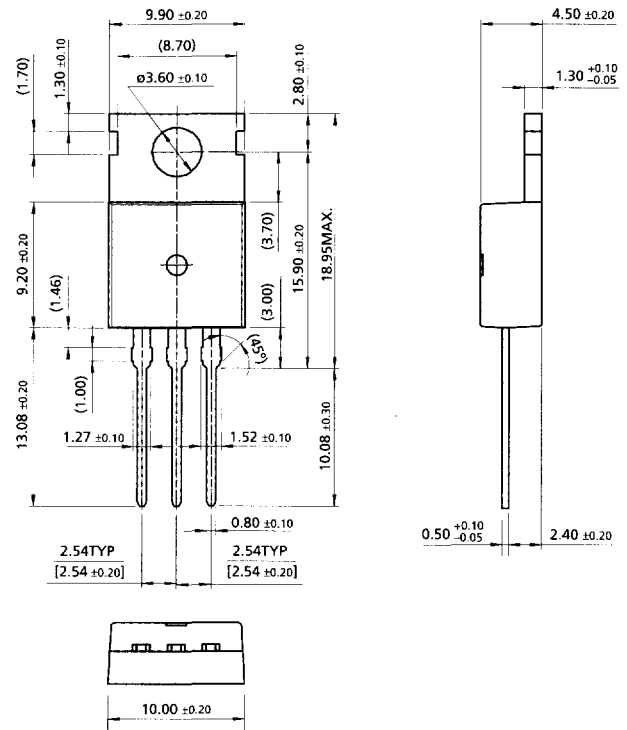


Packaging (all dimensions are in millimeters)

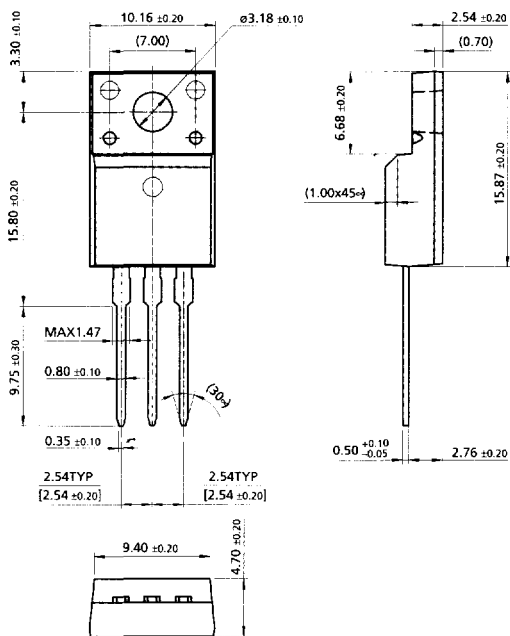
TO-264 (FS PKG Code AR)



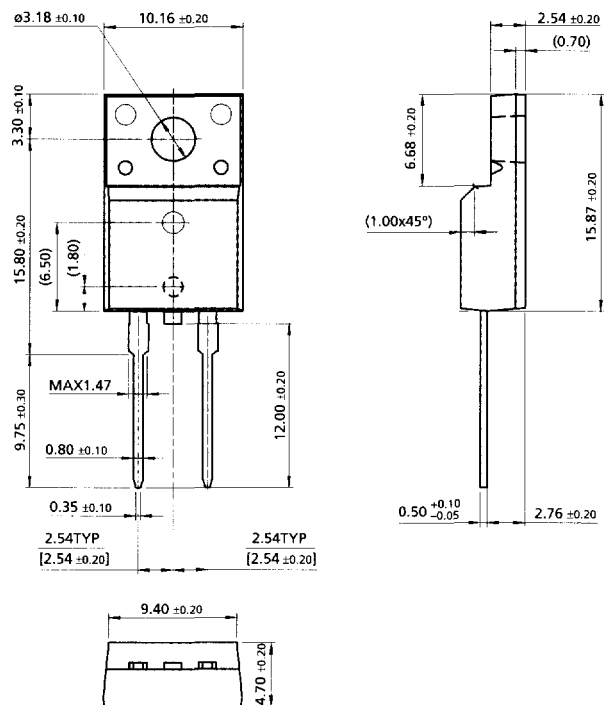
TO-220 (FS PKG Code AE)



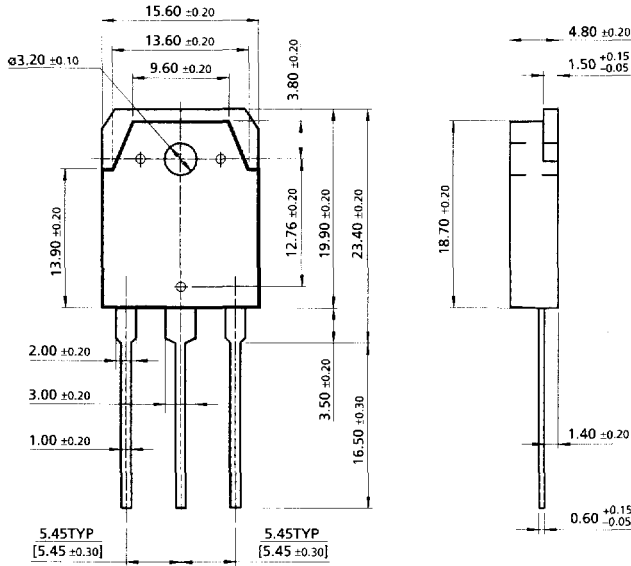
TO-220F (FS PKG Code AQ)



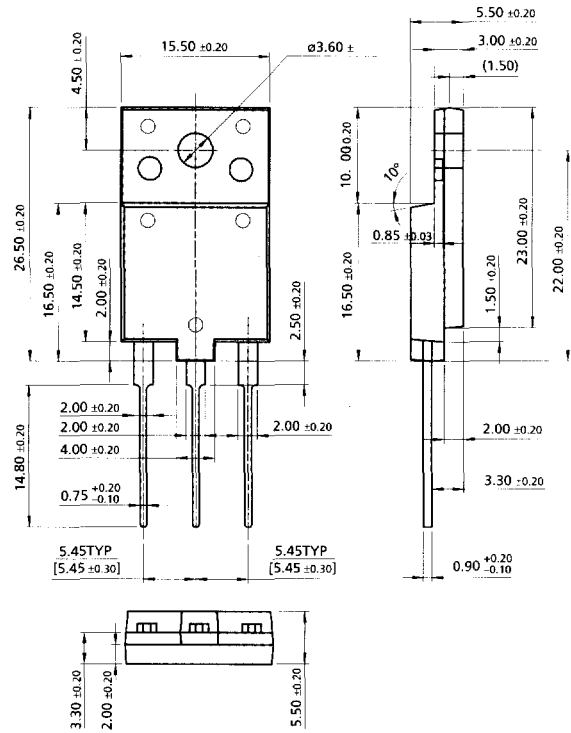
TO-220F-2L (FS PKG Code BL)



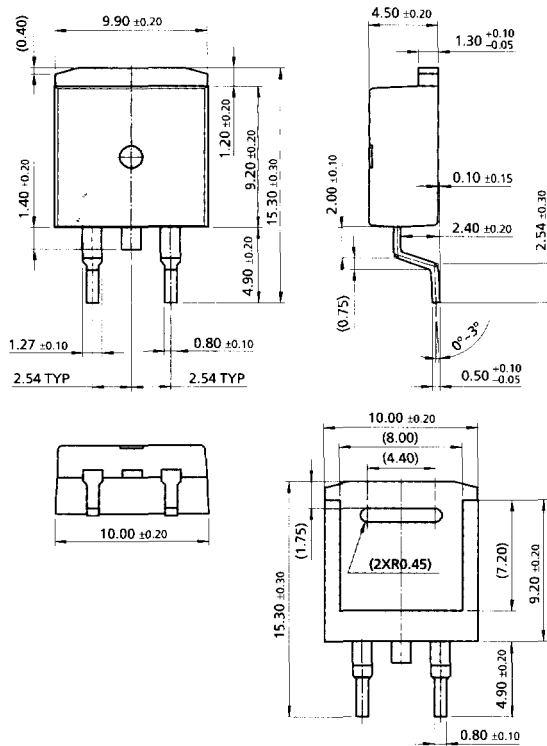
TO-3P (FS PKG Code AF)



TO-3PF (FS PKG Code AG)



D²-PAK (FS PKG Code AB)



Product Line

Fast Recovery Diodes (FRDs)

FFPF06U20S	FFP06U20DN
FFPF10U20S	FFP10U20DN
FFPF15U20S	FFP15U20DN
FFPF20U20S	FFP04U40DN
FFPF30U20S	FFP06U40DN
FFPF04U40S	FFP05U60DN
FFPF06U40S	FFP10U60DN
FFPF10U40S	FFP20U60DN
FFPF15U40S	FFP30U60DN
FFPF20U40S	FFAF15U20DN
FFPF05U60S	FFAF20U20DN
FFPF10U60S	FFAF10U40DN
FFPF20U60S	FFAF30U60DN
FFPF30U60S	FFAF40U60DN
FFPF40U60S	FFAF60U60DN
FFPF05U120S	FFAF05U120DN
FFPF10U120S	FFAF10U120DN
FFPF15U120S	FFAF15U120DN
FFB05U120S	FFAF20U120DN
FFB10U120S	FFA15U20DN
FFPF06U20DP	FFA20U20DN
FFPF10U20DP	FFA30U20DN
FFPF15U20DP	FFA10U40DN
FFPF04U40DP	FFA15U40DN
FFPF06U40DP	FFA20U40DN
FFPF06U20DN	FFA30U60DN
FFPF10U20DN	FFA40U60DN
FFPF15U20DN	FFA60U60DN
FFPF04U40DN	FFA05U120DN
FFPF06U40DN	FFA10U120DN
FFPF05U60DN	FFA15U120DN
FFPF10U60DN	FFA20U120DN
FFPF20U60DN	FFL60U60DN
FFPF30U60DN	FFL20U120DN
	FFL25U120DN

Schottky Barrier Diodes (SBDs)

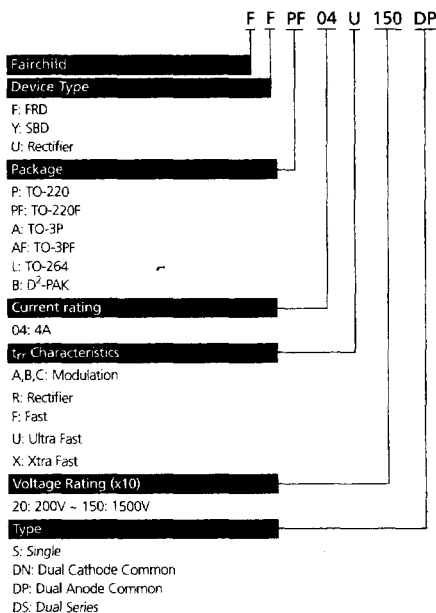
FYPF1004DN*	FYAF3004DN*
FYPF1504DN*	FYPF2006DN
FYPF2004DN*	FYPF1010DN

Damper Diodes and Damper & Modulation Diodes

FFPF04F150S	FFPF10U150S
FFPF04U150S	FFPF14U150S
FFPF06F150S	FFPF14X150S
FFPF06U150S	FFPF05U170S*
FFPF10F150S	FFAF60A150DS

*In development

Ordering Codes



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