



GUR440 & GUR460 MUR440 & MUR460 Ultrafast Axial-Leaded Rectifiers

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Datasheets

(Part numbers are listed on the Selector Chart pages).

NEW FOUR AMPERE AXIAL FER INTRODUCTION

General Semiconductor is introducing four new part numbers, GUR440, GUR460, MUR440 and MUR460. Please note, the “440” specification is a 400 volt rectifier and the “460” specification represents a 600 volt component, all other parameters are identical for both types. The “GUR” specifications are tighter and this series offers faster switching and better (and specified) reverse energy handling performance. The accompanying benchmark data shows the switching speed and stored charge superiority of the Gen. Semi GUR460. Stored charge at room temperature is 52% lower and 32% less at 100C. This superior switching performance comes with no sacrifice in forward performance, either static (V_F) or dynamic (V_{FP}). The part survives ESD testing to 25KV using the air discharge method, as does its Motorola counterpart. Utilizing the 8x20 μ s. current waveform for surge testing, the General Semiconductor part handles more than 90 mj.of energy before failure, the Motorola counterpart exhibits first failures before 20 mj!

The Motorola MUR460 is a widely used ultra fast rectifier in SMPS and motor controllers in industrial, commercial and consumer equipment. The part number (MUR460) is an industry standard and on numerous RFQ's as seen both through distribution and OEM sales channels. For this reason the MUR440/460 part numbers and data sheets are being offered. The GUR series is clearly recommended for new and/or leading edge designs, as it delivers superior performance and cannot be matched by Motorola's MUR460. These parts are in an axial package (DO-201AD), applications not bound by space restrictions, such as: monitors, TV's, industrial controls, “silver box” SMPS and similar high voltage, large real estate applications should be targeted for GUR460 business. Due to the outstanding switching performance the General Semiconductor GUR460 will, depending on switching frequency, run up to 15% cooler (than it's Motorola counterpart) in circuits switching at frequencies greater than 60KHZ.

CROSS REFERENCE

Competitor's Part Number	General Semiconductor Part Number	
	Exact Replacement	Better Replacement
MUR 440	MUR440	GUR440
MUR460	MUR460	GUR460
FUR460		GUR460

ULTRAFAST RECOVERY RECTIFIERS (FER)

I _{F(AV)} (A)	Device ⁽¹⁾	Package		V _(BR) Range (V)	Max V _F @ (V)	I _F (A)	trr (ns)
		Family	Type				
0.5	EGL34y	SUPERECTIFIER [®] SMD	DO-213AA (mini-MELF)	50 - 400	1.25 / 1.35	0.50	50
0.6	UG06y	Plastic Axial ⁽²⁾	UG06	50 - 200	0.95	0.60	15
1.0	EGP10x	SUPERECTIFIER Axial	DO-204AL (DO-41)	50 - 400	0.95 / 1.25	1.0	50
	UF4001 - UF4007	Plastic Axial ⁽²⁾	DO-204AL (DO-41)	50 - 1000	1.0 / 1.7	1.05	0.0 / 75.0
	US1y	Plastic SMD ⁽²⁾	DO-214AC (SMA)	50 - 600	1.0 / 1.7	1.05	0.0 / 75.0
	FE1y	Glass Axial	DO-204AP	50 - 200	0.95	1.0	35
	BYV26D & E	Glass Axial	DO-204AP	800 - 1000	2.5	1.0	75
	UG1y	Plastic Axial ⁽²⁾	DO-204AL (DO-41)	50 - 200	0.95	1.0	15.0
	G11001 - G1004	Glass Axial	DO-204AP	50 - 200	0.975	1.0	25
	EGL41y	SUPERECTIFIER SMD	DO-213AB (MELF)	50 - 400	1.0 / 1.25	1.0	50
	BYM12-xxx	SUPERECTIFIER SMD	DO-213AB (MELF)	50 - 400	1.0 / 1.25	1.0	50
ES1y	Plastic SMD ⁽²⁾	DO-214AC (SMA)	50 - 200	0.92	1.0	15	
EGF1y	SUPERECTIFIER SMD	DO-214BA (GF1)	50 - 200	1.0	1.0	50	
1.5	SUF15y	Plastic Axial ⁽²⁾	GP20	400 & 600	1.8	1.5	35
2.0	EGP20y	SUPERECTIFIER Axial	DO-204AC (DO-15)	50 - 400	0.95 / 1.25	2.0	50
	FE2y	Glass Axial	DO-204AP	50 - 200	0.95	2.0	35
	BYV27-xxx	Glass Axial	DO-204AP	50 - 200	1.07	3.0	25
	SBYV27-xxx	Plastic Axial ⁽²⁾	DO-204AC (DO-15)	50 - 200	1.07	3.0	15
	UG2y	Plastic Axial ⁽²⁾	DO-204AC (DO-15)	50 - 200	0.95	2.0	15
	ES2A - ES2D	Plastic SMD ⁽²⁾	DO-214AA (SMB)	50 - 200	0.90	2.0	20
ES2F - ES2G +	Plastic SMD ⁽²⁾	DO-214AA (SMB)	300 - 400	1.10	2.0	35	
2.5	G1101 - G1104	Glass Axial	DO-204AP	50 - 200	0.975 / 1.25	2.0	25/50
3.0	UF5400 - UF5408	Plastic Axial ⁽²⁾	DO-201AD	50 - 1000	1.0 / 1.7	3.0	50/75
	EGP30y	SUPERECTIFIER Axial	GP20	50 - 400	0.95 / 1.25	3.0	50
	FE3y	Glass Axial	G4	50 - 200	0.95	3.0	35
	ES3y	Plastic SMD ⁽²⁾	DO-214AB (SMC)	50 - 200	0.90	3.0	20
	ES3F - ES3G +	Plastic SMD ⁽²⁾	DO-214AB (SMC)	300 - 400	1.10	3.0	35
SUF30y	Plastic Axial ⁽²⁾	P600	400 & 600	1.8/2.0	3.0	35	
3.5	BYV28-xxx	Glass Axial	G3	50 - 200	1.1	3.5	30
	SBYV28-xxx	Plastic Axial ⁽²⁾	DO-201AD	50 - 200	1.1	3.5	20
4.0	UG4y	Plastic Axial ⁽²⁾	DO-201AD	50 - 200	0.95	4.0	20
	GUR4XX	Plastic Axial ⁽²⁾	DO-201AD	400-600	1.28	4.0	45
	MUR4xx	Plastic Axial ⁽²⁾	DO-201AD	400-600	1.28	4.0	50
5.0	EGP50y	SUPERECTIFIER Axial	GP20	50 - 400	0.95 / 1.25	5.0	50
	FE5y	Glass Axial	G4	50 - 200	0.95	5.0	35
6.0	FE6y	Glass Axial	G4	50 - 200	0.975	6.0	35
	FEP6yT	Plastic Power-pack ⁽²⁾⁽⁴⁾	TO-220AB	50 - 200	0.975	3.0	35
	FEP6yT +	Isolated Power-pack ⁽²⁾⁽⁴⁾	ITO-220AB	50 - 200	0.975	3.0	35
	FEPB6yT	Power-pack SMD ⁽²⁾⁽⁴⁾	TO-263AB (D2PAK)	50 - 200	0.975	3.0	35

Notes:

(1) **Blue Text = New Products**

"+" designates Advanced Information. Please contact sales office for availability

"x" designates a number that indicates voltage or is part of a sequence

"y" designates reverse voltage, where:

A=50V C=150V F=300V H=500V

B=100V D=200V G=400 J=600V

(2) Glass passivated die

(3) Planar, oxide passivated die

(4) Dual center-tapped device (V_F limit @ I_F is per leg)

ULTRAFAST RECOVERY RECTIFIERS (FER) – Con't.

I _{F(AV)} (A)	Device ⁽¹⁾	PACKAGE		V _(BR) Range (V)	Max V _F (V)	@	I _F (A)	trr (ns)
		Family	Type					
8.0	UG8AT - DT	Plastic Power-pack ⁽²⁾	TO-220AC	50 - 200	1.0	-	8.0	20
	UGF8AT - DT +	Isolated Power-pack ⁽²⁾	ITO-220AC	50 - 200	1.0		8.0	20
	UGB8AT - DT	Power-pack SMD ⁽²⁾	TO-263AB(D2 PAK)	50 - 200	1.0		8.0	20
	UG8FT - GT +	Plastic Power-pack ⁽²⁾	TO-220AC	300-400	1.3		8.0	35
	UGF8FT - GT +	Isolated Power-pack ⁽²⁾	ITO-220AC	300-400	1.3		8.0	35
	UGB8FT - GT +	Power-pack SMD ⁽²⁾	TO-263AB(D2 PAK)	300-400	1.3		8.0	35
	UG8HT - JT +	Plastic Power-pack ⁽³⁾	TO-220AC	500-600	1.75		8.0	25
	UGF8HT - JT +	Isolated Power-pack ⁽³⁾	ITO-220AC	500-600	1.75		8.0	25
	UGB8HT - JT +	Power-pack SMD ⁽³⁾	TO-263AB (D2 PAK)	500-600	1.75		8.0	25
	FES8yT	Plastic Power-pack ⁽²⁾	TO-220AC	50 - 600	0.95 / 1.3 / 1.5		8.0	35 / 50
	FESF8yT	Isolated Power-pack ⁽²⁾	ITO-220AC	50 - 600	0.95 / 1.3 / 1.5		8.0	35 / 50
	FESB8yT	Power-pack SMD ⁽²⁾	TO-263AB(D2 PAK)	50 - 600	0.95 / 1.3 / 1.5		8.0	35 / 50
	GI1401 - GI1404	Plastic Power-pack ⁽²⁾	TO-220AC	50 - 200	0.975		8.0	35
	GIF1401 - GIF1404 +	Isolated Power-pack ⁽²⁾	ITO-220AC	50 - 200	0.975		8.0	35
	GIB1401 - GIB1404	Power-pack SMD ⁽²⁾	TO-263AB(D2 PAK)	50 - 200	0.975		8.0	35
	BYW29-xx	Plastic Power-pack ⁽²⁾	TO-220AC	50 - 200	1.3		8.0	25
BYWF29-xx +	Isolated Power-pack ⁽²⁾	ITO-220AC	50 - 200	1.3	8.0	25		
BYWB29-xx	Power-pack SMD ⁽²⁾	TO-263AB(D2 PAK)	50 - 200	1.3	8.0	25		
10.0	UG10ACT - DCT	Plastic Power-pack ⁽²⁾⁽⁴⁾	TO-220AB	50 - 200	1.1	5.0	25	
	UGF10ACT - DCT	Isolated Power-pack ⁽²⁾⁽⁴⁾	ITO-220AB	50 - 200	1.1	5.0	25	
	UGB10ACT - DCT	Power-pack SMD ⁽²⁾⁽⁴⁾	TO-263AB(D2 PAK)	50 - 200	1.1	5.0	25	
	UG10FCT - GCT +	Plastic Power-pack ⁽²⁾⁽⁴⁾	TO-220AB	300 - 400	1.3	5.0	35	
	UGF10FCT - GCT +	Isolated Power-pack ⁽²⁾⁽⁴⁾	ITO-220AB	300 - 400	1.3	5.0	35	
	UGB10FCT - GCT +	Power-pack SMD ⁽²⁾⁽⁴⁾	TO-263AB(D2 PAK)	300 - 400	1.3	5.0	35	
16.0	FES16yT	Plastic Power-pack ⁽²⁾	TO-220AC	50 - 600	0.975 / 1.3 / 1.5	-	16.0	35 / 50
	FESF16yT +	Isolated Power-pack ⁽²⁾	ITO-220AC	50 - 600	0.975 / 1.3 / 1.5		16.0	35 / 50
	FESB16yT	Power-pack SMD ⁽²⁾	TO-263AB(D2 PAK)	50 - 600	0.975 / 1.3 / 1.5		16.0	35 / 50
	FEP16yT	Plastic Power-pack ⁽²⁾⁽⁴⁾	TO-220AB	50 - 600	0.95 / 1.3 / 1.5		8.0	35 / 50
	FEPF16yT +	Isolated Power-pack ⁽²⁾⁽⁴⁾	ITO-220AB	50 - 600	0.95 / 1.3 / 1.5		8.0	35 / 50
	FEPB16yT	Power-pack SMD ⁽²⁾⁽⁴⁾	TO-263AB ⁽²⁾⁽⁴⁾	50 - 600	0.95 / 1.3 / 1.5		8.0	35 / 50
	GI2401 - GI2404	Plastic Power-pack ⁽²⁾⁽⁴⁾	TO-220AB	50 - 200	0.975		16.0	35
	GIF2401 - GIF2404 +	Isolated Power-pack ⁽²⁾⁽⁴⁾	ITO-220AB	50 - 200	0.975		16.0	35
GIB2401 - GIB2404	Power-pack SMD ⁽²⁾⁽⁴⁾	TO-263AB ⁽²⁾⁽⁴⁾	50 - 200	0.975	16.0	35		
18.0	BYV32-xx	Plastic Power-pack ⁽²⁾⁽⁴⁾	TO-220AB	50 - 200	1.15	-	20.0	25
	BYVF32-xx +	Isolated Power-pack ⁽²⁾⁽⁴⁾	ITO-220AB	50 - 200	1.15		20.0	25
	BYVB32-xx	Power-pack SMD ⁽²⁾⁽⁴⁾	TO-263AB(D2 PAK)	50 - 200	1.15		20.0	25
	UG18yCT	Plastic Power-pack ⁽²⁾⁽⁴⁾	TO-220AB	50 - 200	1.1		9.0	20
	UGF18yCT +	Isolated Power-pack ⁽²⁾⁽⁴⁾	ITO-220AB	50 - 200	1.1		9.0	20
	UGB18yCT	Power-pack SMD ⁽²⁾⁽⁴⁾	TO-263AB(D2 PAK)	50 - 200	1.1		9.0	20
30.0	FEP30yP	Plastic Power-pack ⁽²⁾⁽⁴⁾	TO-247AD	50 - 600	0.95 / 1.3 / 1.5	-	15.0	35/50
	UG30yPT	Plastic Power-pack ⁽²⁾⁽⁴⁾	TO-247AD	50 - 200	1.0		15.0	020

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(2) Glass passivated die

(3) Planar, oxide passivated die

(4) Dual center-tapped device (V_F limit @ I_F is per leg)

GUR460 FEATURES

- **Performance verses Motorola MUR460**
 - Superior room and high temperature switching performance (t_{rr})
 - Lower stored charge (Q_{rr})
 - 52% lower at $T_c=25^\circ\text{C}$
 - 32% lower at $T_c=100^\circ\text{C}$
- **Specified Reverse Energy Rating (25mJ)**
- **Low V_{fp}**

GUR460 APPLICATIONS

- **Intended for applications where P.C.B. landscape is plentiful**
- **Computer**
 - Monitor
 - Desktop “silver box” power supply
 - UPS
- **Industrial Applications**
 - Motor controllers
 - SMPS
- **Consumer**
 - T.V.
 - VCR
- **Telecom**
 - Cell site power supply
 - Central office switch and associated electronics