

Pb Free Plating Product

## FML-4204S



20Amperes,400Volts Insulated Common Cathode Ultra Fast Recovery Rectifiers

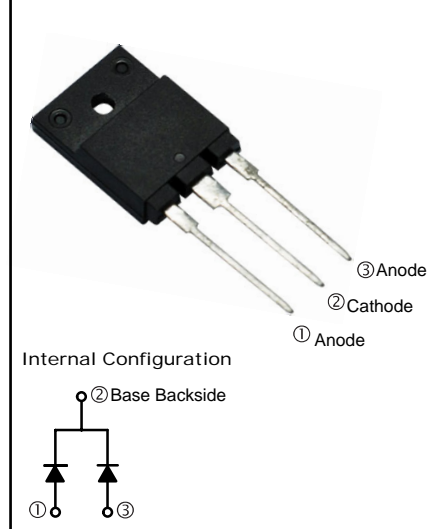
### APPLICATION

- Freewheeling, Snubber, Clamp
- Inversion Welder
- PFC
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper
- UPS

### PRODUCT FEATURE

- Ultrafast Recovery Time
- Soft Recovery Characteristics
- Low Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Leakage Current

TO-3PF(TO-3PML)



### GENERAL DESCRIPTION

FML-4204S using the latest FRED FAB process(planar passivation chip) with ultrafast and soft recovery characteristic.

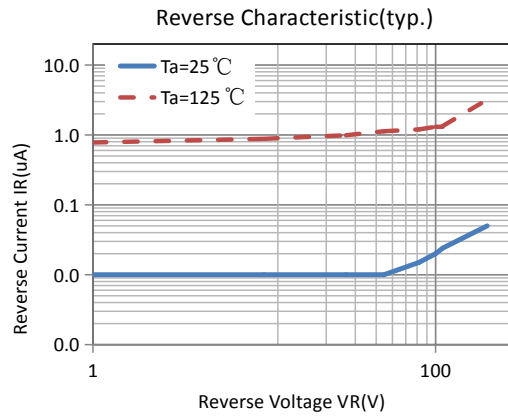
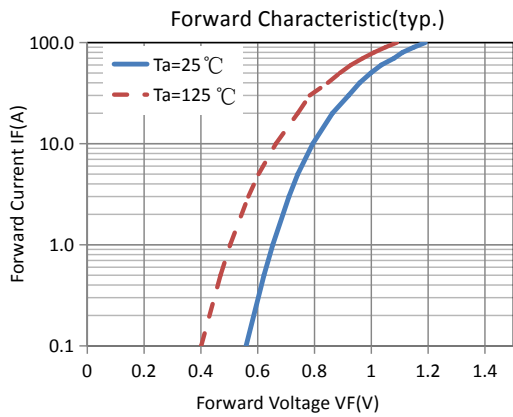
Absolute Maximum Ratings				
Parameter	Symbol	Test Conditions	Values	Units
Repetitive peak reverse voltage	V <sub>RRM</sub>		400	V
Continuous forward current(total device)	I <sub>F(AV)</sub>	T <sub>c</sub> =110°C	20	A
Single pulse forward current(total device)	I <sub>FSM</sub>	T <sub>c</sub> =25°C	180	
Maximum repetitive forward current	I <sub>FRM</sub>	Square wave, 20kHz	40	
Operating junction	T <sub>j</sub>		175	°C
Storage temperatures	T <sub>stg</sub>		-55 to +175	°C

Electrical characteristics (Ta=25°C unless otherwise specified)						
Parameter	Symbol	Test Conditions	Min	Typ.	Max.	Units
Breakdown voltage Blocking voltage	V <sub>BR</sub> , V <sub>R</sub>	I <sub>R</sub> =100μA	400			V
Forward voltage (Per Diode)	V <sub>F</sub>	I <sub>F</sub> =10A I <sub>F</sub> =10A, T <sub>j</sub> =125°C		1.10 0.90	1.45 1.30	
Reverse leakage current(Per Diode)	I <sub>R</sub>	V <sub>R</sub> = V <sub>RRM</sub> T <sub>j</sub> =150°C, V <sub>R</sub> =400V			10 100	μA
Reverse recovery time(Per Diode)	t <sub>rr</sub>	I <sub>F</sub> =0.5A, I <sub>R</sub> =1A, I <sub>RR</sub> =0.25A I <sub>F</sub> =1A, V <sub>R</sub> =30V, di/dt =200A/us		35 25	45 35	ns

### Thermal characteristics

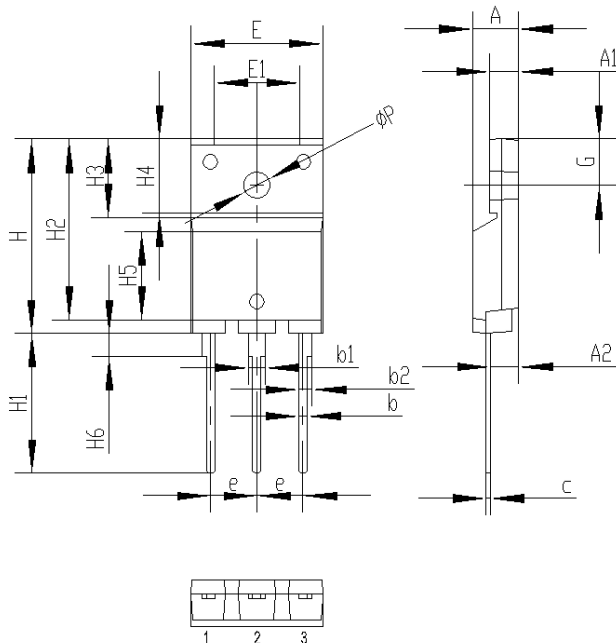
Paramter	Symbol	Typ	Units
Junction-to-Case	R <sub>θJC</sub>	1.2	°C/W

## Electrical performance (typical)



## Package Information

### TO-3PF PACKAGE



	mm		
	MIN	NOM	MAX
A	5.3	5.5	5.7
A1	3.25	3.45	3.65
A2	3.15	3.35	3.55
b	0.85	1.0	1.15
b1	1.85	2.0	2.15
b2	1.45	1.6	1.75
c	0.4	0.5	0.6
e	5.3	5.45	5.6
E	15.40	15.60	15.80
E1	10.00	10.20	10.40
H	22.80	23.00	23.20
H1	16.00	16.50	17.00
H2	21.20	21.40	21.60
H3	9.10	9.30	9.50
H4	8.55	8.75	8.95
H5	10.20	10.40	10.60
H6	2.55	2.70	2.85
G	5.3	5.5	5.7
ØP	3.05	3.2	3.35