

Pb Free Plating Product

IDP30E60



30Amperes,600Volts SwitchMode Ultrafast Recovery Epitaxial Diode

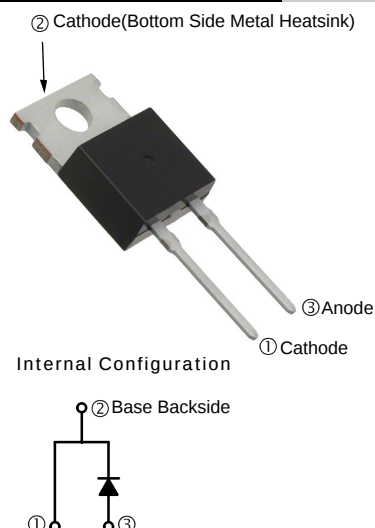
APPLICATION

- 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-220AC/TO-220CB-2P



GENERAL DESCRIPTION

IDP30E60 using latest matured FRED FAB process(planar passivation pellet) with ultrafast and soft recovery characteristics.

Absolute Maximum Ratings

Parameter	Symbol	Test Conditions	Values	Units
Repetitive peak reverse voltage	V_{RRM}		600	V
Continuous forward current	$I_{F(AV)}$	$T_c = 110^\circ\text{C}$	30	A
Single pulse forward current	I_{FSM}	$T_c = 25^\circ\text{C}$	240	
Maximum repetitive forward current	I_{FRM}	Square wave, 20kHz	55	
Operating junction	T_j		175	$^\circ\text{C}$
Storage temperatures	T_{stg}		-55 to +175	$^\circ\text{C}$

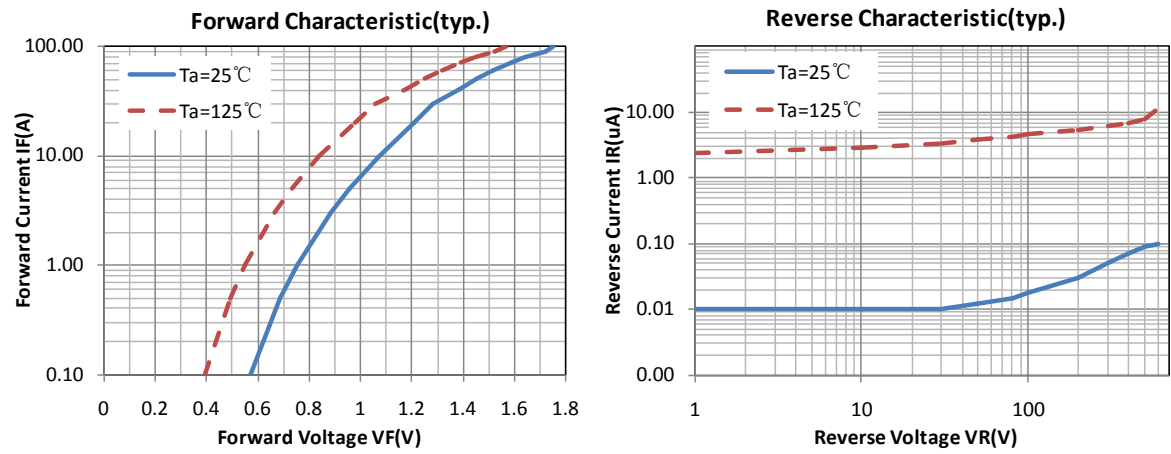
Electrical characteristics ($T_a = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ.	Max.	Units
Breakdown voltage Blocking voltage	V_{BR}, V_R	$I_R = 100\mu\text{A}$	600			V
Forward voltage (Per Diode)	V_F	$I_F = 30\text{A}$		1.30	1.60	
		$I_F = 30\text{A}, T_j = 125^\circ\text{C}$		1.05	1.40	
Reverse leakage current(Per Diode)	I_R	$V_R = V_{RRM}$			20	μA
		$T_j = 150^\circ\text{C}, V_R = 600\text{V}$			200	
Reverse recovery time(Per Diode)	t_{rr}	$I_F = 0.5\text{A}, I_R = 1\text{A}, I_{RR} = 0.25\text{A}$		35	45	ns
		$I_F = 1\text{A}, V_R = 30\text{V}, di/dt = -200\text{A}/\mu\text{s}$		28	35	

Thermal characteristics

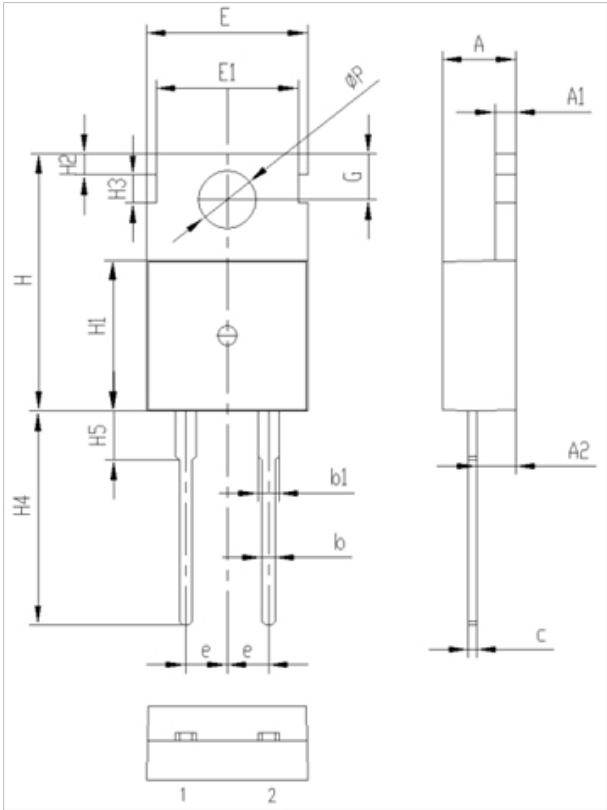
Paramter	Symbol	Typ	Units
Junction-to-Case	$R_{\theta JC}$	1.6	$^\circ\text{C}/\text{W}$

Electrical performance (typic)



Package Information

TO-220AC PACKAGE



Symbol	Dimensions(millimeters)	
	Min.	Max.
A	4.30	4.70
A1	1.17	1.37
A2	2.20	2.60
b	0.60	1.00
b1	1.17	1.37
b2	1.90	2.30
c	0.30	0.70
e	2.34	2.74
E	9.70	10.1
E1	8.50	8.90
H	15.5	15.9
H1	9.00	9.40
H2	1.10	1.50
H3	1.50	1.90
H4	12.58	13.58
H5	2.80	3.20
G	2.60	3.00
ΦP	3.40	3.80