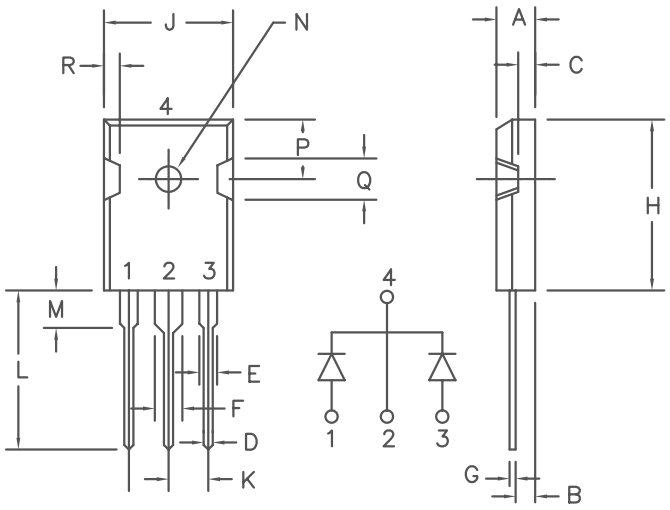
45 Amp Ultrafast Rectifiers

UES4505C – UES4515C



Similar to TO–247AD

Dim.	Inches		Millimeter		
	Minimum	Maximum	Minimum	Maximum	Notes
A	.185	.209	4.70	5.31	
B	.087	.102	2.21	2.59	
C	.059	.098	1.50	2.49	
D	.040	.055	1.02	1.40	
E	.079	.094	2.01	2.39	
F	.118	.133	3.00	3.38	
G	.016	.031	.410	0.78	
H	.819	.883	20.80	22.4	
J	.627	.650	15.93	16.5	
K	.215	—	5.46	—	Typ.
L	.790	.810	20.07	20.6	
M	.157	.180	3.99	4.57	
N	.139	.144	3.53	3.66	Dia.
P	.255	.300	6.48	7.62	
Q	.170	.210	4.32	5.33	
R	.080	.110	2.03	2.79	

Microsemi Catalog Number	Industry Part Number	Repetitive Peak Reverse Voltage	Transient Peak Reverse Voltage
UES4505C		50V	50V
UES4510C		100V	100V
UES4515C		150V	150V

- Ultrafast Recovery Rectifiers
- V_{RRM} 50–150 Volts
- 150°C junction temperature
- trr 35nS maximum

Electrical Characteristics

Average forward current per leg	$I_{F(AV)}$ 22.5 Amps	T_C = 116°C
Average forward current per package	$I_{F(AV)}$ 45 Amps	T_C = 116°C
Maximum surge current per leg	I_{FSM} 300 Amps	8.3ms, half sine, T_J = 150°C
Max. peak forward voltage per leg	V_{FM} .975 Volts	I_{FM} = 25A, T_J = 25°C*
Typical peak forward voltage per leg	V_{FM} .82 Volts	I_{FM} = 25A, T_J = 150°C*
Max. peak reverse current per leg	I_{RM} 15 uA	V_{RRM}, T_J = 25°C
Typical peak reverse current per leg	I_{RM} 200 uA	V_{RRM}, T_J = 150°C
Max. reverse recovery time	t_{rr} 40 nS	1/2A, 1A, 1/4A
Typical junction capacitance per leg	C_J 205 pF	V_R = 10V, T_J = 25°C

*Pulse test: Pulse width 300 usec. Duty Cycle 2%

Thermal and Mechanical Characteristics

Storage temp range	T_{STG}	−55°C to +175°C
Operating junction temp range	T_J	−55°C to +150°C
Max thermal resistance per pkg.	$R_{\theta JC}$	1.5°C/W junction to case
Max thermal resistance per leg	$R_{\theta JC}$	0.75°C/W junction to case
Mounting torque		8–10 inch pounds (#6 screw)
Weight		.22 ounces (6.2 grams) typical

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10–28–04 Rev. 1

UES4505C – UES4515C

Figure 1
Typical Forward Characteristics – Per Leg

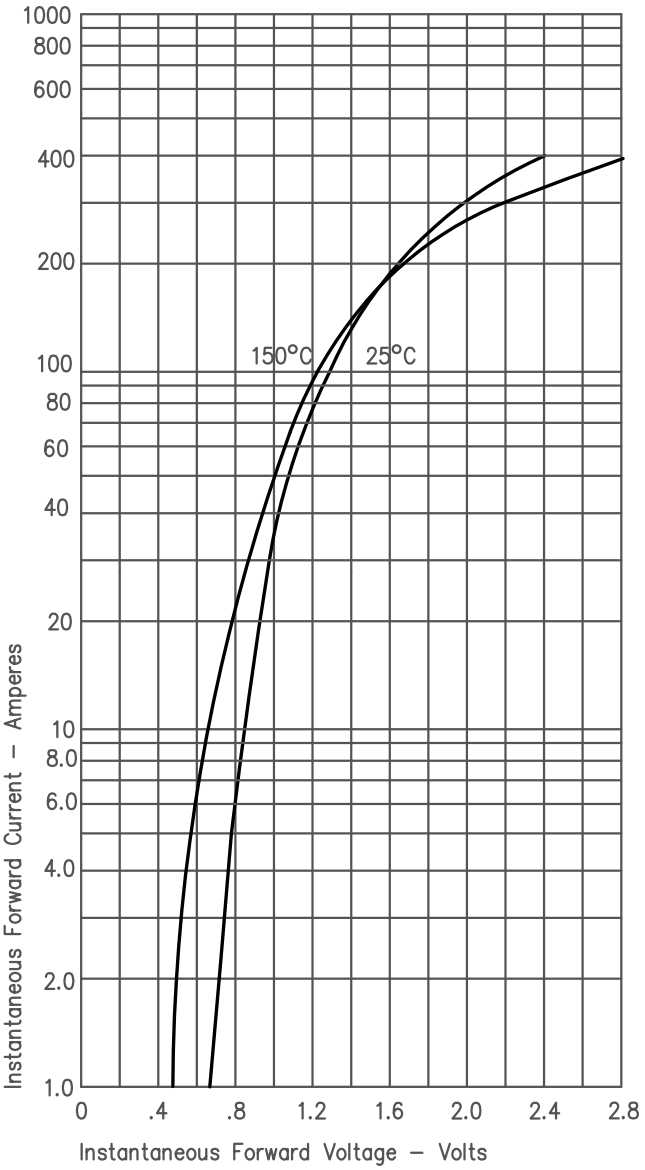

Figure 2
Typical Reverse Characteristics – Per Leg

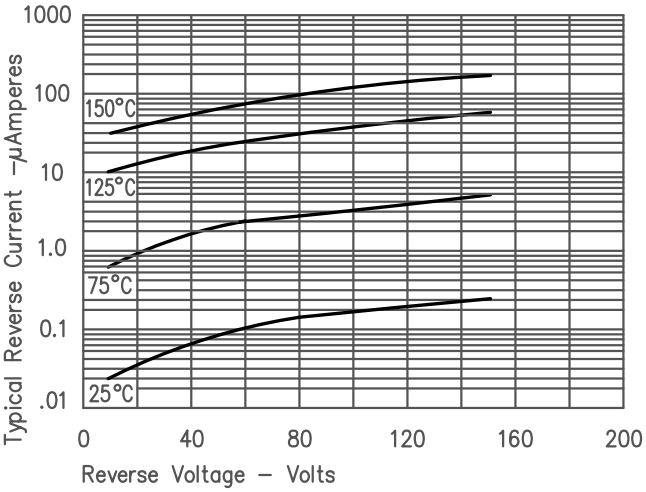

Figure 3
Typical Junction Capacitance – Per Leg

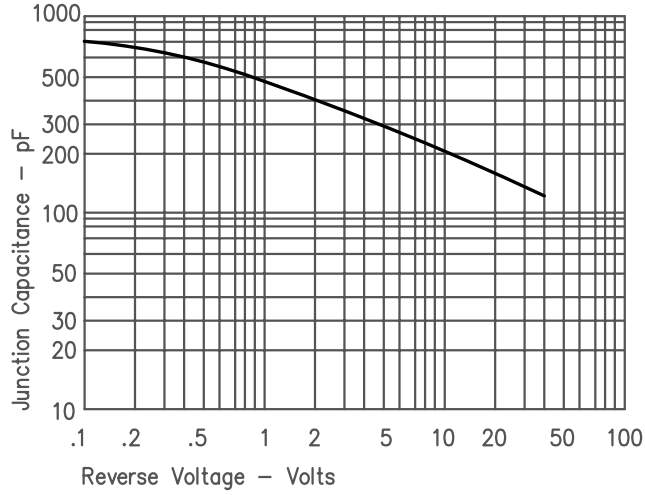

Figure 4
Forward Current Derating – Per Leg

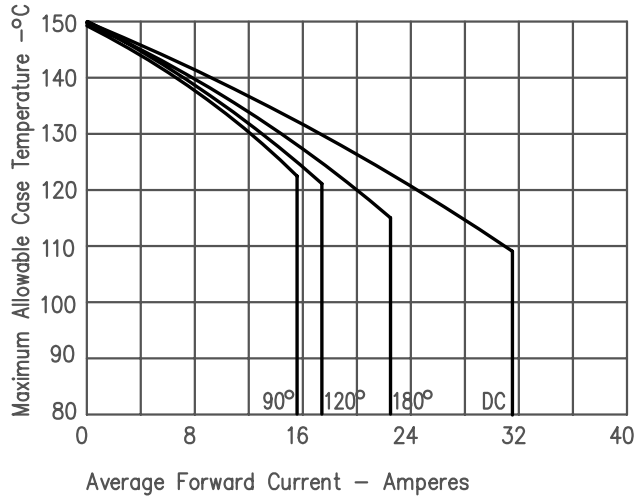

Figure 5
Maximum Forward Power Dissipation – Per Leg