

**ABSOLUTE MAXIMUM RATINGS**

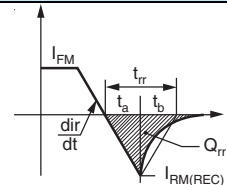
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum average forward current	$I_{F(AV)}$	$T_C = 95\text{ }^{\circ}\text{C}$, 180° conduction half sine wave	30	A
Maximum peak one cycle non-repetitive surge current	I_{FSM}	10 ms sine pulse, rated V_{RRM} applied	300	
		10 ms sine pulse, no voltage reapplied	350	
Maximum I^2t for fusing	I^2t	10 ms sine pulse, rated V_{RRM} applied	450	A^2s
		10 ms sine pulse, no voltage reapplied	636	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	$t = 0.1\text{ ms to } 10\text{ ms}$, no voltage reapplied	6360	$\text{A}^2\sqrt{\text{s}}$

ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum forward voltage drop	V_{FM}	30 A, $T_J = 25\text{ }^{\circ}\text{C}$	1.41	V
Forward slope resistance	r_t	$T_J = 150\text{ }^{\circ}\text{C}$	10.09	$\text{m}\Omega$
Threshold voltage	$V_{F(TO)}$		0.992	V
Maximum reverse leakage current	I_{RM}	$T_J = 25\text{ }^{\circ}\text{C}$	0.1	mA
		$T_J = 150\text{ }^{\circ}\text{C}$	6	

RECOVERY CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Reverse recovery time	t_{rr}	I_F at 30 A _{pk} 25 A/ μs 25 °C	450	ns
Reverse recovery current	I_{rr}		6.1	A
Reverse recovery charge	Q_{rr}		2.16	μC
Snap factor	S	Typical	0.6	

**THERMAL - MECHANICAL SPECIFICATIONS**

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction and storage temperature range	T_J, T_{Stg}		-40 to +150	$^{\circ}\text{C}$
Maximum thermal resistance, junction to case	R_{thJC}	DC operation	0.8	$^{\circ}\text{C/W}$
Maximum thermal resistance, junction to ambient	R_{thJA}		40	
Typical thermal resistance, case to heatsink	R_{thCS}	Mounting surface, smooth and greased	0.2	
Approximate weight			6	g
			0.21	oz.
Mounting torque	minimum		6 (5)	$\text{kgf} \cdot \text{cm}$ ($\text{lbf} \cdot \text{in}$)
	maximum		12 (10)	
Marking device		Case style TO-247AC modified	30EPF10	
			30EPF12	
		Case style TO-247AC	30APF10	
			30APF12	

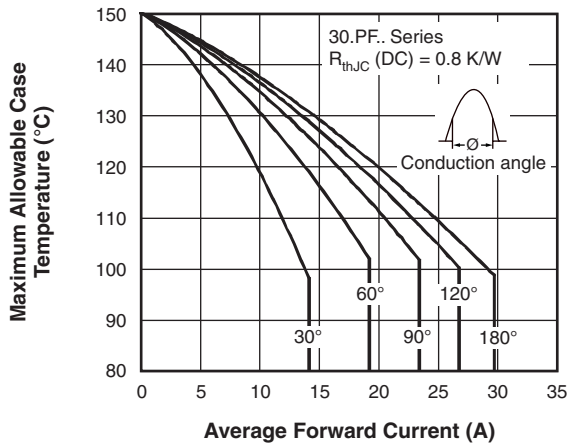


Fig. 1 - Current Rating Characteristics

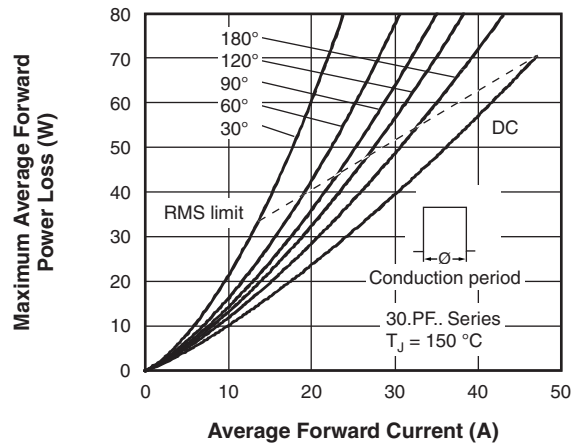


Fig. 4 - Forward Power Loss Characteristics

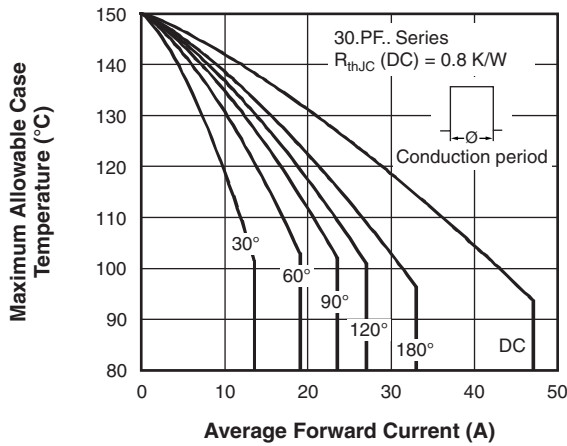


Fig. 2 - Current Rating Characteristics

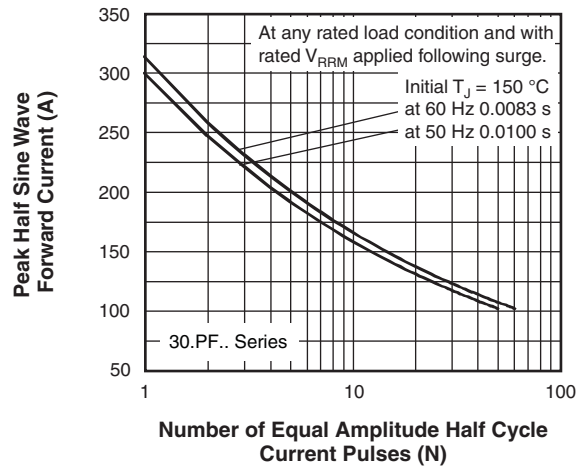


Fig. 5 - Maximum Non-Repetitive Surge Current

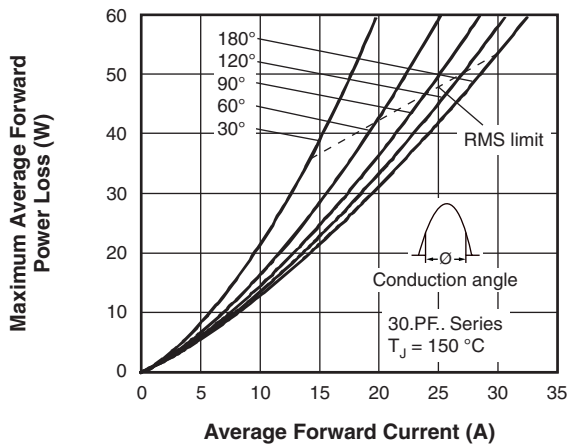


Fig. 3 - Forward Power Loss Characteristics

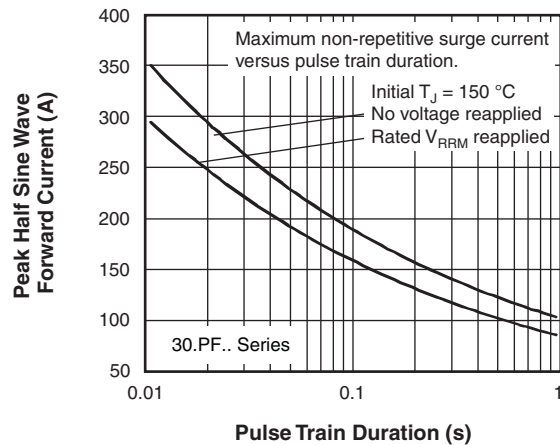


Fig. 6 - Maximum Non-Repetitive Surge Current

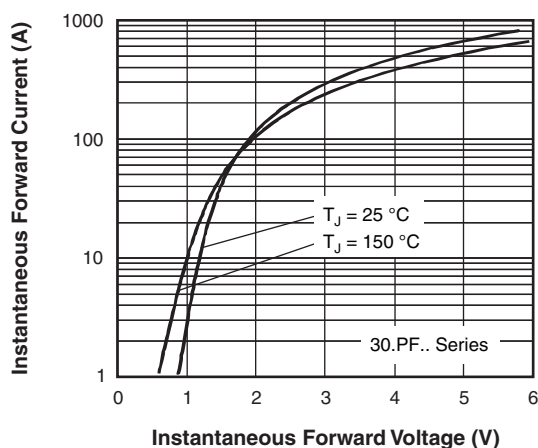


Fig. 7 - Forward Voltage Drop Characteristics

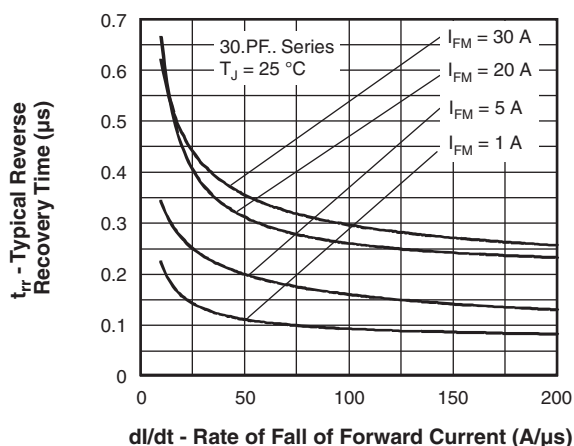


Fig. 8 - Recovery Time Characteristics, $T_J = 25\text{ }^{\circ}\text{C}$

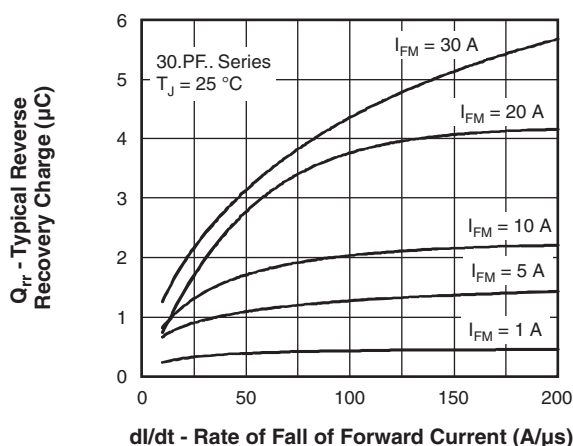


Fig. 10 - Recovery Charge Characteristics, $T_J = 25\text{ }^{\circ}\text{C}$

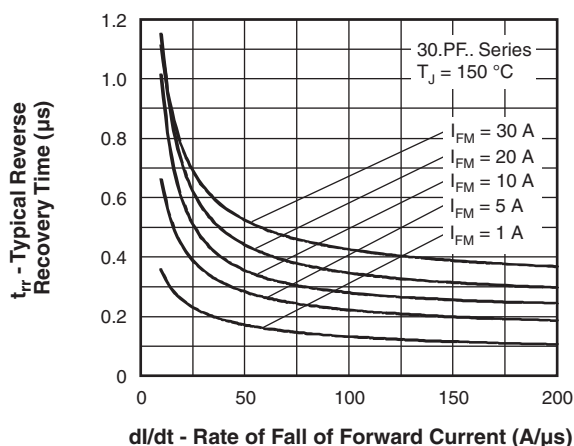


Fig. 9 - Recovery Time Characteristics, $T_J = 150\text{ }^{\circ}\text{C}$

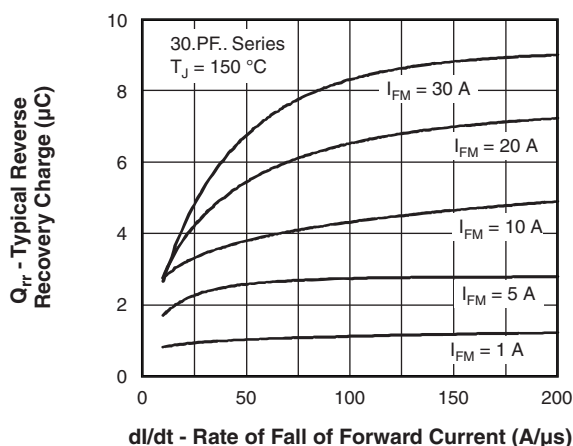


Fig. 11 - Recovery Charge Characteristics, $T_J = 150\text{ }^{\circ}\text{C}$

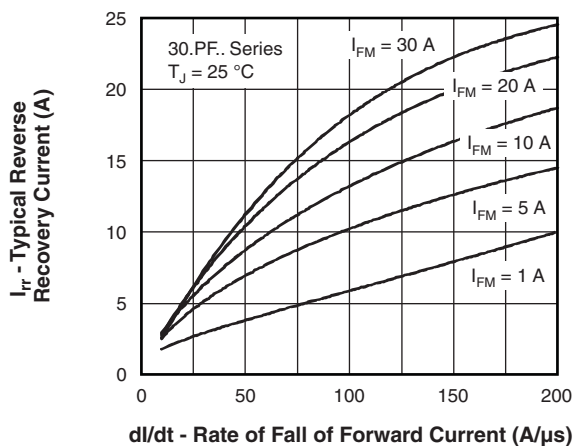


Fig. 12 - Recovery Current Characteristics, $T_J = 25^\circ C$

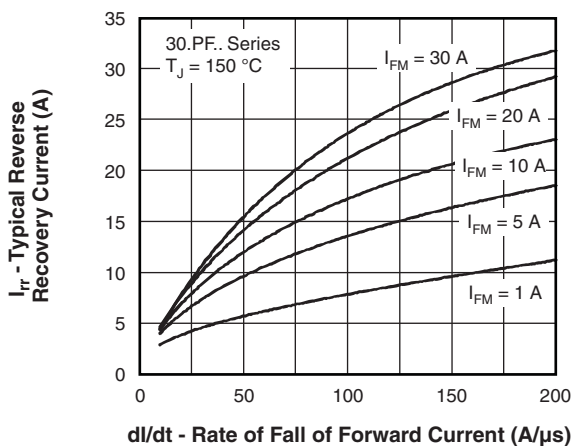


Fig. 13 - Recovery Current Characteristics, $T_J = 150^\circ C$

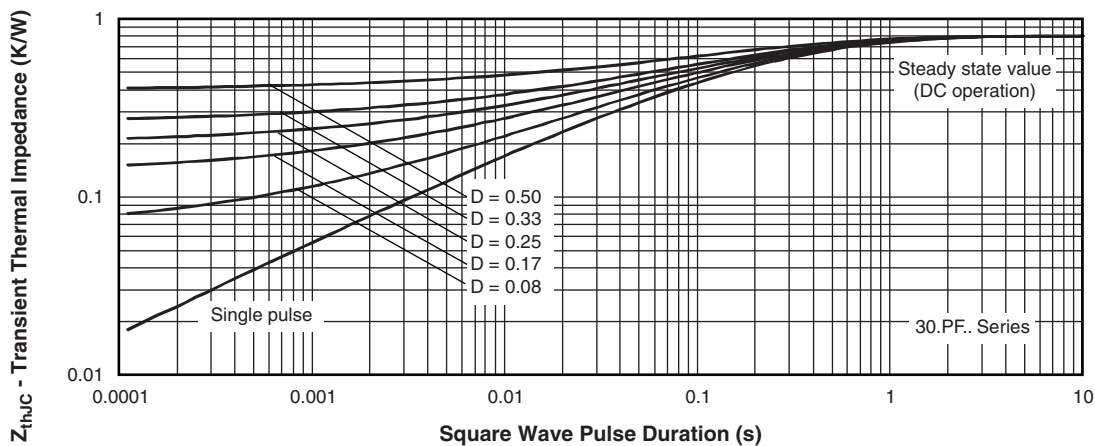


Fig. 14 - Thermal Impedance Z_{thJC} Characteristics

**ORDERING INFORMATION TABLE**

Device code	VS-	30	E	P	F	12	PbF
	①	②	③	④	⑤	⑥	⑦
	1	-	Vishay Semiconductors product				
	2	-	Current rating (30 = 30 A)				
	3	-	Circuit configuration:				
			E = single diode				
			A = single diode, 3 pins				
	4	-	Package:				
			P = TO-247AC/TO-247AC modified				
	5	-	Type of silicon:				
			F = fast recovery				
	6	-	Voltage code x 100 = V_{RRM}				10 = 1000 V 12 = 1200 V
	7	-	Environmental digit:				
			• PbF = lead (Pb)-free and RoHS-compliant				
			• -M3 = halogen-free, RoHS-compliant, and terminations lead (Pb)-free				

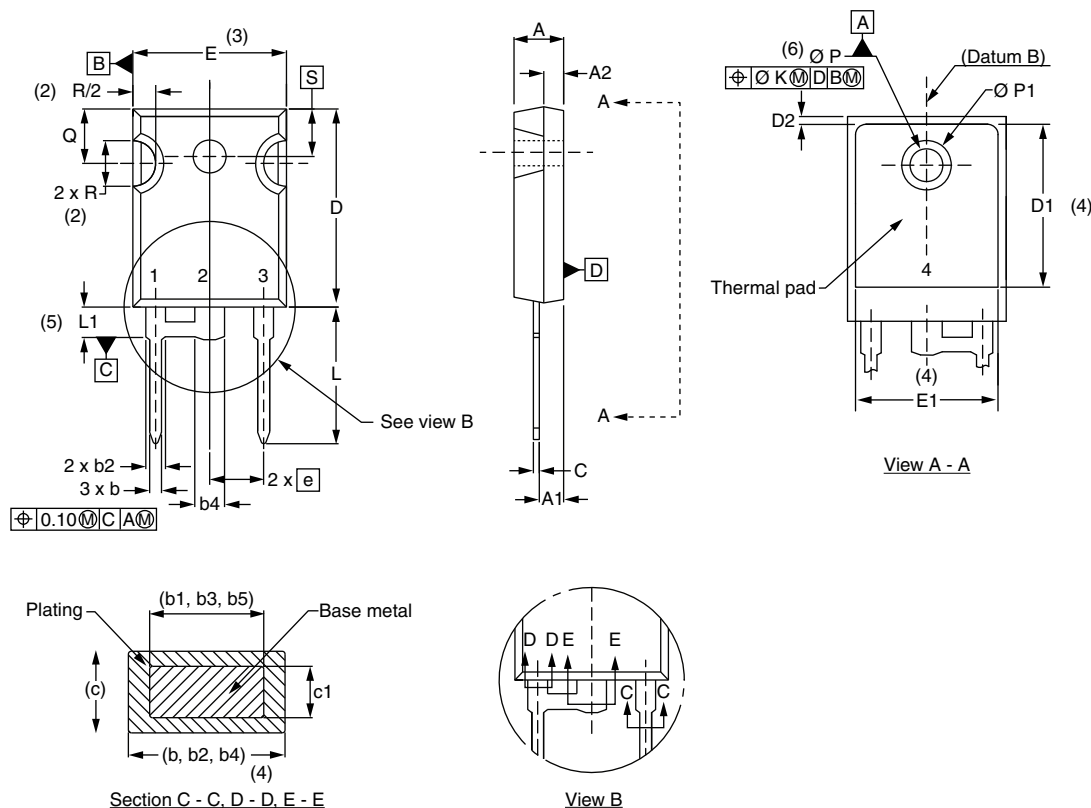
ORDERING INFORMATION (Example)			
PREFERRED P/N	QUANTITY PER T/R	MINIMUM ORDER QUANTITY	PACKAGING DESCRIPTION
VS-30EPF10PbF	25	500	Antistatic plastic tubes
VS-30EPF10-M3	25	500	Antistatic plastic tubes
VS-30APF10PbF	25	500	Antistatic plastic tubes
VS-30APF10-M3	25	500	Antistatic plastic tubes
VS-30EPF12PbF	25	500	Antistatic plastic tubes
VS-30EPF12-M3	25	500	Antistatic plastic tubes
VS-30APF12PbF	25	500	Antistatic plastic tubes
VS-30APF12-M3	25	500	Antistatic plastic tubes

LINKS TO RELATED DOCUMENTS		
Dimensions	TO-247AC modified	www.vishay.com/doc?95541
	TO-247AC	www.vishay.com/doc?95542
Part marking information	TO-247AC modified PbF	www.vishay.com/doc?95255
	TO-247AC modified -M3	www.vishay.com/doc?95442
	TO-247AC PbF	www.vishay.com/doc?95226
	TO-247AC -M3	www.vishay.com/doc?95007
SPIICE model		www.vishay.com/doc?95184



TO-247AC modified - 50 mils L/F

DIMENSIONS in millimeters and inches



SYMBOL	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	4.65	5.31	0.183	0.209	
A1	2.21	2.59	0.087	0.102	
A2	1.17	1.37	0.046	0.054	
b	0.99	1.40	0.039	0.055	
b1	0.99	1.35	0.039	0.053	
b2	1.65	2.39	0.065	0.094	
b3	1.65	2.34	0.065	0.092	
b4	2.59	3.43	0.102	0.135	
b5	2.59	3.38	0.102	0.133	
c	0.38	0.89	0.015	0.035	
c1	0.38	0.84	0.015	0.033	
D	19.71	20.70	0.776	0.815	3
D1	13.08	-	0.515	-	4

SYMBOL	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.	
D2	0.51	1.35	0.020	0.053	
E	15.29	15.87	0.602	0.625	3
E1	13.46	-	0.53	-	
e	5.46 BSC		0.215 BSC		
Ø K	0.254		0.010		
L	14.20	16.10	0.559	0.634	
L1	3.71	4.29	0.146	0.169	
Ø P	3.56	3.66	0.14	0.144	
Ø P1	-	7.39	-	0.291	
Q	5.31	5.69	0.209	0.224	
R	4.52	5.49	0.178	0.216	
S	5.51 BSC		0.217 BSC		

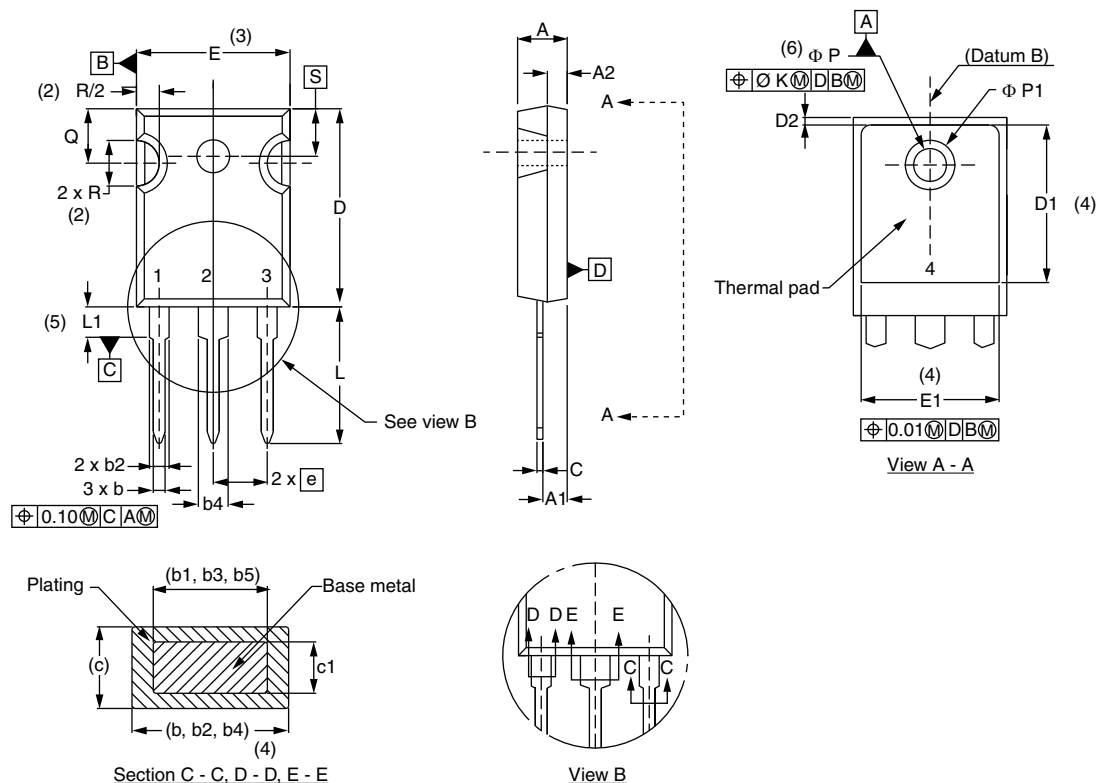
Notes

- Dimensioning and tolerance per ASME Y14.5M-1994
- Contour of slot optional
- Dimension D and E do not include mold flash. Mold flash shall not exceed 0.127 mm (0.005") per side. These dimensions are measured at the outermost extremes of the plastic body
- Thermal pad contour optional with dimensions D1 and E1
- Lead finish uncontrolled in L1
- Ø P to have a maximum draft angle of 1.5 to the top of the part with a maximum hole diameter of 3.91 mm (0.154")
- Outline conforms to JEDEC® outline TO-247 with exception of dimension c and Q



TO-247AC - 50 mils L/F

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