

**ELECTRICAL SPECIFICATIONS**

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum forward voltage drop See fig. 1	$V_{FM}^{(1)}$	15 A	0.49	V
		30 A	0.58	
		15 A	0.40	
		30 A	0.53	
Maximum reverse leakage current See fig. 2	$I_{RM}^{(1)}$	$T_J = 25\text{ }^{\circ}\text{C}$	1.75	mA
		$T_J = 125\text{ }^{\circ}\text{C}$	97	
Threshold voltage	$V_{F(TO)}$	$T_J = T_J \text{ maximum}$	0.233	V
Forward slope resistance	r_t		9.09	m Ω
Maximum junction capacitance per leg	C_T	$V_R = 5\text{ V}_{DC}$ (test signal range 100 kHz to 1 MHz), $25\text{ }^{\circ}\text{C}$	1300	pF
Typical series inductance per leg	L_S	Measured lead to lead 5 mm from package body	8.0	nH
Maximum voltage rate of change	dV/dt	Rated V_R	10 000	V/ μ s

Note

⁽¹⁾ Pulse width < 300 μ s, duty cycle < 2 %

THERMAL - MECHANICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction and storage temperature range	T _J , T _{Stg}		-55 to +150	°C
Maximum thermal resistance, junction to case per leg	R _{thJC}	DC operation See fig. 4	3.25	°C/W
Typical thermal resistance, case to heatsink	R _{thCS}	Mounting surface, smooth and greased	0.50	
Approximate weight			2	g
			0.07	oz.
Mounting torque	minimum		6 (5)	kgf · cm (lbf · in)
	maximum		12 (10)	
Marking device		Case style D ² PAK	32CTQ025S	
			32CTQ030S	
		Case style TO-262	32CTQ025-1	
			32CTQ030-1	

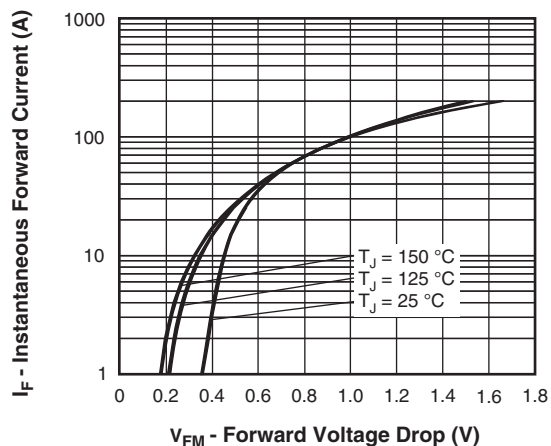


Fig. 1 - Maximum Forward Voltage Drop Characteristics

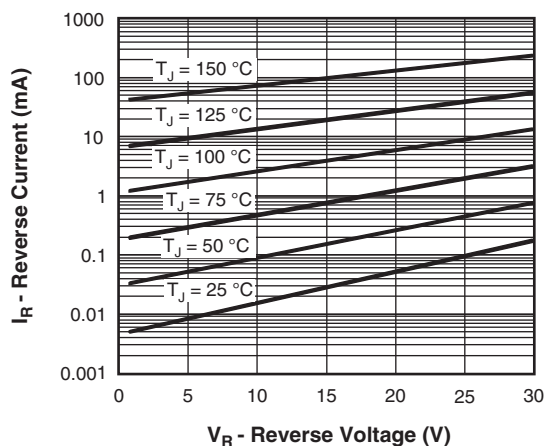


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage

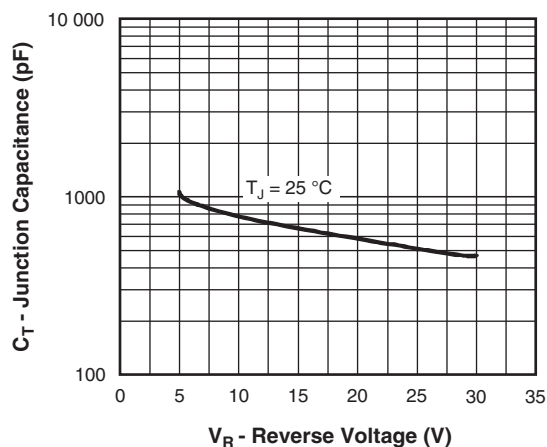
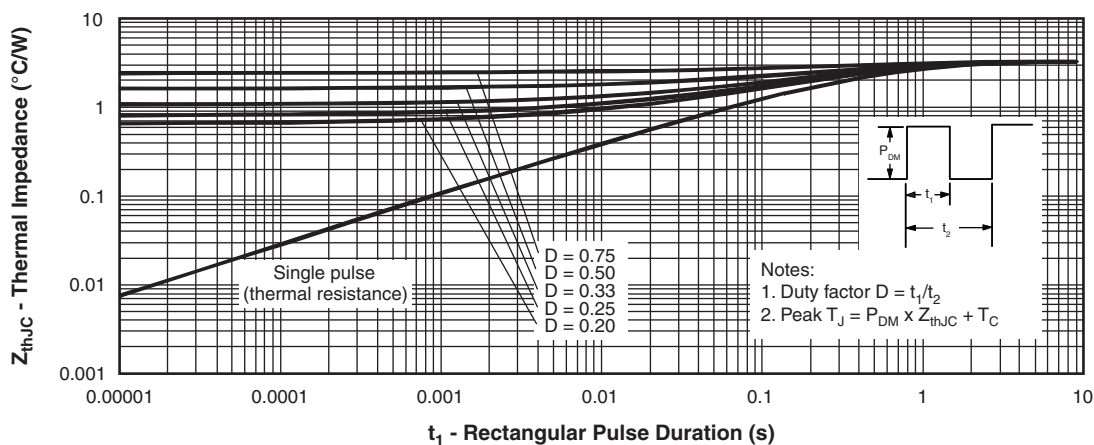


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

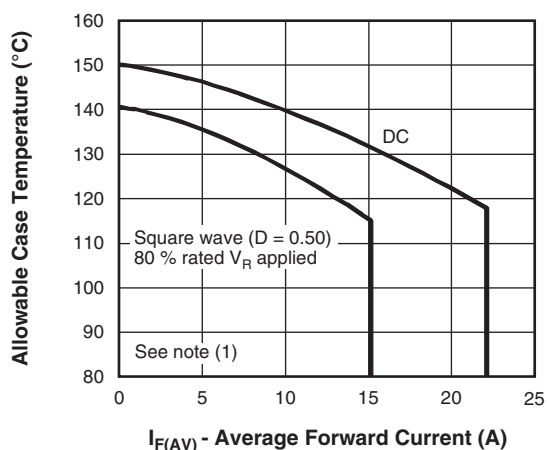


Fig. 5 - Maximum Allowable Case Temperature vs. Average Forward Current

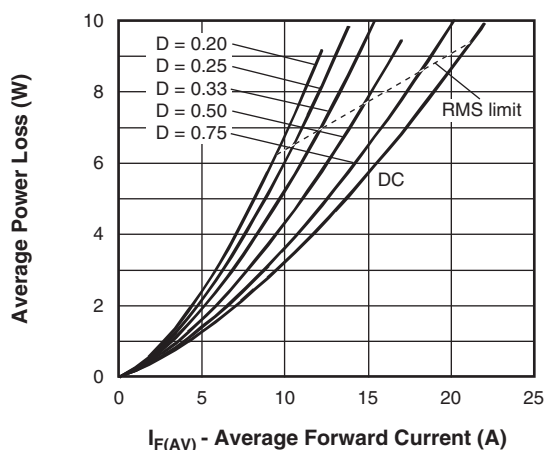


Fig. 6 - Forward Power Loss Characteristics

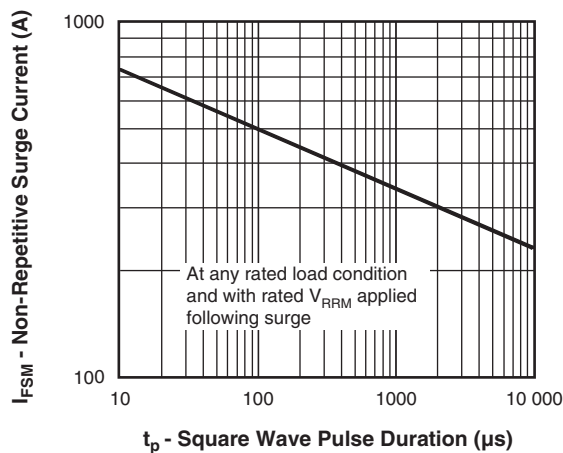


Fig. 7 - Maximum Non-Repetitive Surge Current

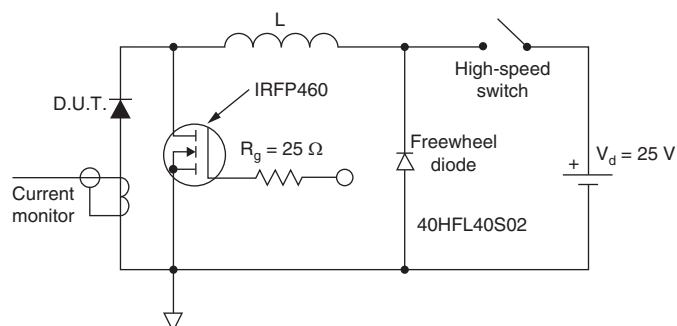


Fig. 8 - Unclamped Inductive Test Circuit

Note

- (1) Formula used: $T_C = T_J - (P_d + P_{dREV}) \times R_{thJC}$;
 P_d = Forward power loss = $I_{F(AV)} \times V_{FM}$ at $(I_{F(AV)}/D)$ (see fig. 6);
 P_{dREV} = Inverse power loss = $V_{R1} \times I_R (1 - D)$; I_R at $V_{R1} = 80\%$ rated V_R

**ORDERING INFORMATION TABLE**

Device code	VS-	32	C	T	Q	030	S	TRL	PbF
	1	2	3	4	5	6	7	8	9

- | | | | |
|----------|---|--|--------------------------|
| 1 | - | Vishay Semiconductors product | |
| 2 | - | Current rating (30 A) | |
| 3 | - | Circuit configuration: C = common cathode | |
| 4 | - | T = TO-220 | |
| 5 | - | Schottky "Q" series | |
| 6 | - | Voltage ratings | 025 = 25 V
030 = 30 V |
| 7 | - | • S = D ² PAK
• -1 = TO-262 | |
| 8 | - | • None = tube (50 pieces)
• TRL = tape and reel (left oriented - for D ² PAK only)
• TRR = tape and reel (right oriented - for D ² PAK only) | |
| 9 | - | PbF = lead (Pb)-free | |

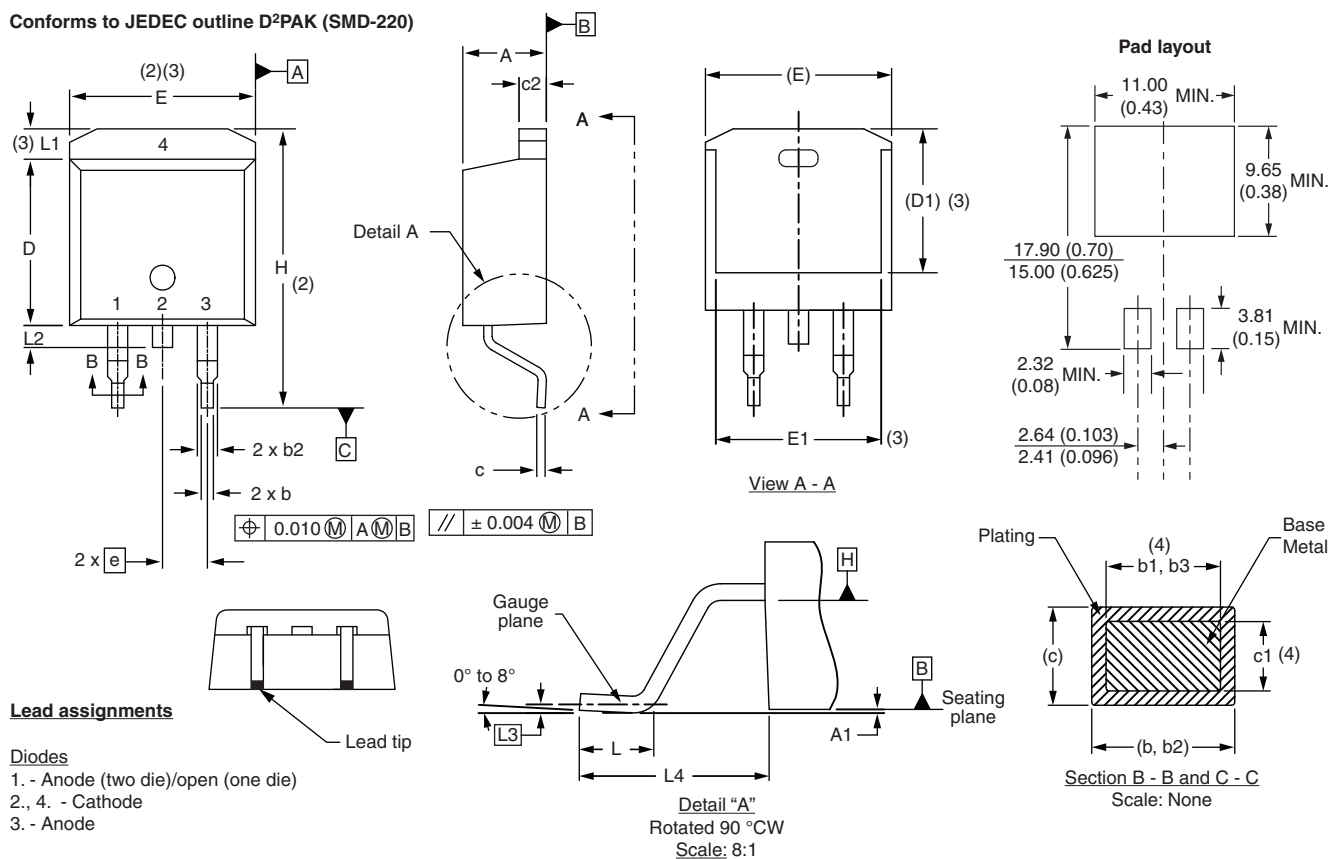
ORDERING INFORMATION (Example)			
PREFERRED P/N	QUANTITY PER REEL	MINIMUM ORDER QUANTITY	PACKAGING DESCRIPTION
VS-32CTQ025SPBF	50	1000	Antistatic plastic tubes
VS-32CTQ025STRRPBF	800	800	13" diameter plastic tape and reel
VS-32CTQ025STRLPBF	800	800	13" diameter plastic tape and reel
VS-32CTQ025-1PBF	50	1000	Antistatic plastic tubes
VS-32CTQ030SPBF	50	1000	Antistatic plastic tubes
VS-32CTQ030STRRPBF	800	800	13" diameter plastic tape and reel
VS-32CTQ030STRLPBF	800	800	13" diameter plastic tape and reel
VS-32CTQ030-1PBF	50	1000	Antistatic plastic tubes

LINKS TO RELATED DOCUMENTS		
Dimensions	TO-263AB (D ² PAK)	www.vishay.com/doc?95046
	TO-262AA	www.vishay.com/doc?95419
Part marking information		www.vishay.com/doc?95008
Packaging information		www.vishay.com/doc?95032

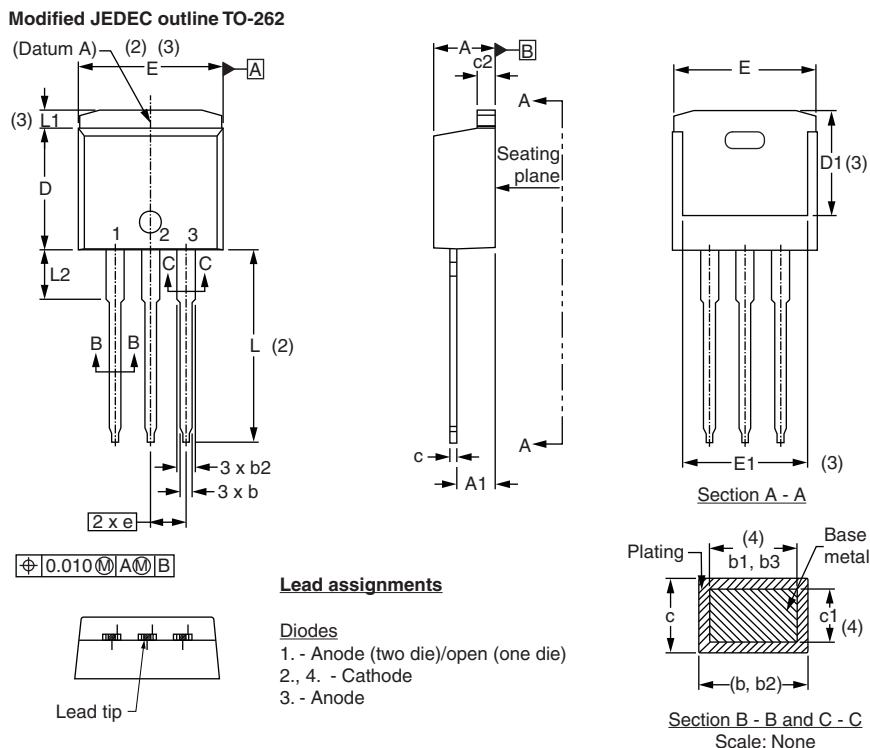
D²PAK, TO-262

DIMENSIONS - D²PAK in millimeters and inches

Conforms to JEDEC outline D²PAK (SMD-220)



DIMENSIONS - TO-262 in millimeters and inches



SYMBOL	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	4.06	4.83	0.160	0.190	
A1	2.03	3.02	0.080	0.119	
b	0.51	0.99	0.020	0.039	
b1	0.51	0.89	0.020	0.035	4
b2	1.14	1.78	0.045	0.070	
b3	1.14	1.73	0.045	0.068	4
c	0.38	0.74	0.015	0.029	
c1	0.38	0.58	0.015	0.023	4
c2	1.14	1.65	0.045	0.065	
D	8.51	9.65	0.335	0.380	2
D1	6.86	8.00	0.270	0.315	3
E	9.65	10.67	0.380	0.420	2, 3
E1	7.90	8.80	0.311	0.346	3
e	2.54 BSC		0.100 BSC		
L	13.46	14.10	0.530	0.555	
L1	-	1.65	-	0.065	3
L2	3.56	3.71	0.140	0.146	

Notes

- (1) Dimensioning and tolerancing as per ASME Y14.5M-1994
- (2) 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 outmost extremes of the plastic body
- (3) Thermal pad contour optional within dimension E, L1, D1 and E1
- (4) Dimension b1 and c1 apply to base metal only
- (5) Controlling dimension: inches

- (6) Outline conform to JEDEC TO-262 except A1 (maximum), b (minimum) and D1 (minimum) where dimensions derived the actual package outline



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