DYNAMIC RECOVERY CHARACTERISTICS (T_J = 25 °C unless otherwise specified)							
PARAMETER	SYMBOL	TEST CONDITIONS		MIN.	TYP.	MAX.	UNITS
Reverse recovery time	t_{rr}	I_F = 1 A, dI_F/dt = 50 A/µs, V_R = 30 V		-	55	-	ns
		I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 A		-	-	65	
		T_J = 25 °C	I_F = 15 A, dI_F/dt = 500 A/µs, V_R = 400 V	-	96	-	
		T_J = 125 °C		-	150	-	
Peak recovery current	I_{RRM}	T_J = 25 °C		-	18	-	A
		T_J = 125 °C		-	26	-	
Reverse recovery charge	Q_{rr}	T_J = 25 °C		-	1.0	-	µC
		T_J = 125 °C		-	2.0	-	

THERMAL - MECHANICAL SPECIFICATIONS						
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Maximum junction and storage temperature range	T_J, T_{Stg}		-55	-	+175	°C
Thermal resistance, per diode junction to mount	R_{thJM}		-	1.2	1.7	°C/W
Approximate weight			0.55			g
			0.02			oz.
Marking device		Case style SMPD (TO-263AC)	30CDU06			

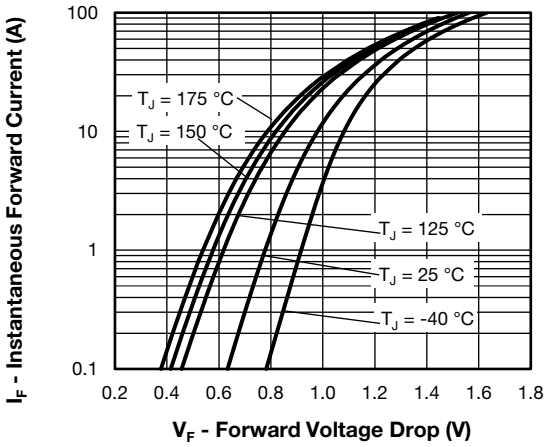


Fig. 1 - Typical Forward Voltage Drop Characteristics

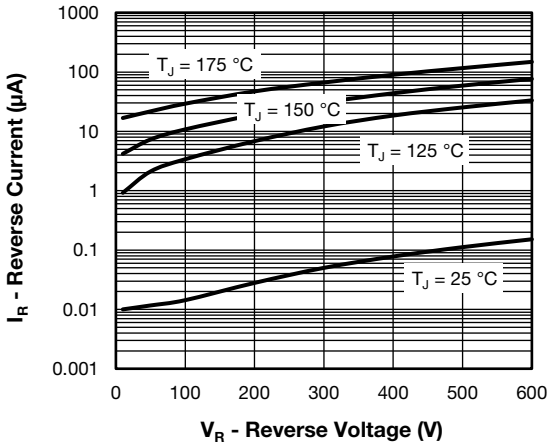


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage

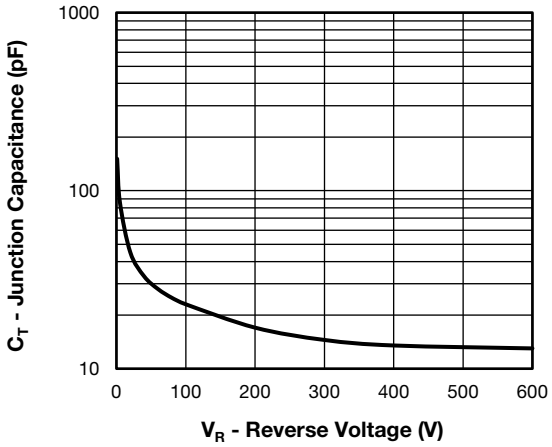


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage

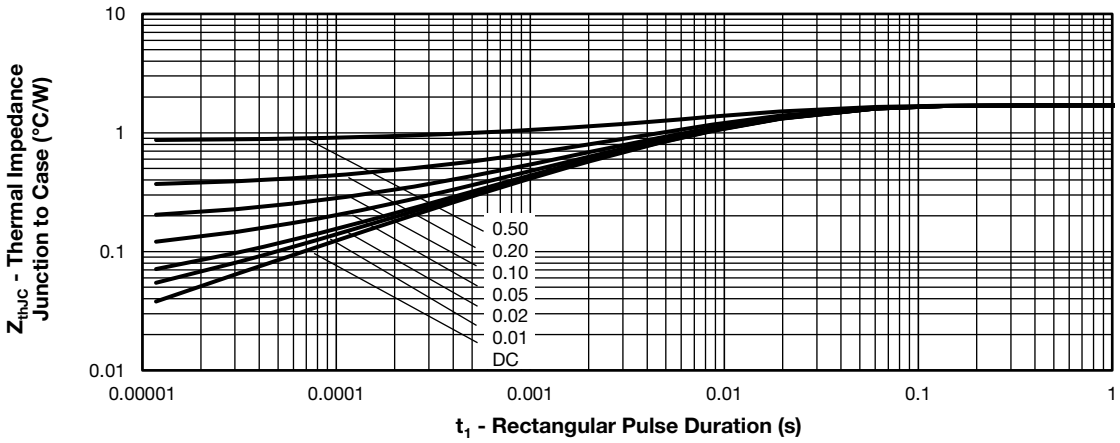


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

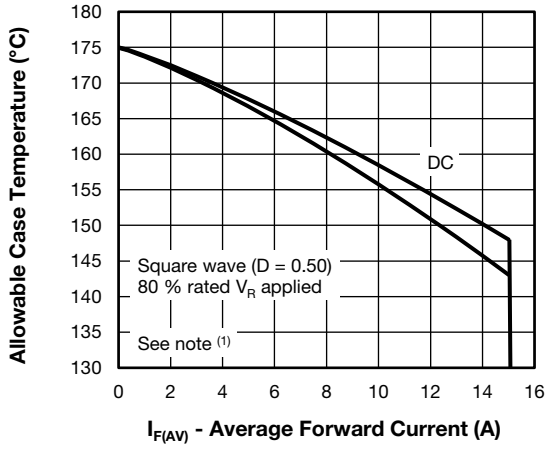


Fig. 5 - Maximum Allowable Case Temperature vs. Average Forward Current

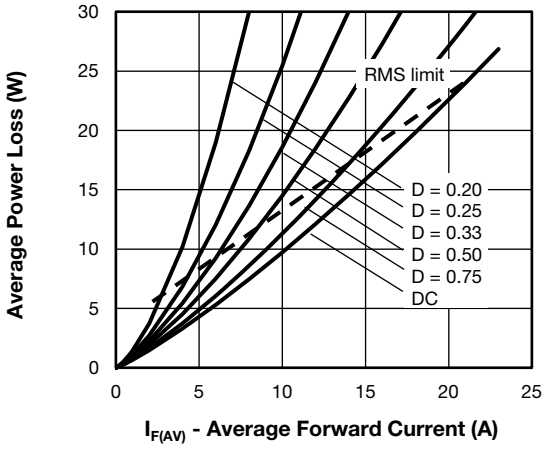


Fig. 6 - Forward Power Loss Characteristics

Note

(1) Formula used: $T_C = T_J - (Pd + Pd_{REV}) \times R_{thJC}$;
Pd = forward power loss = $I_{F(AV)} \times V_{FM}$ at ($I_{F(AV)}$/D) (see fig. 5);
Pd_{REV} = inverse power loss = $V_{R1} \times I_R (1 - D)$; I_R at V_{R1} = rated V_R

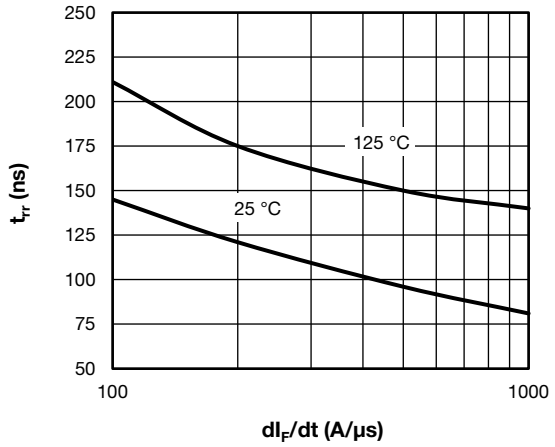


Fig. 7 - Typical Reverse Recovery Time vs. dI_F/dt

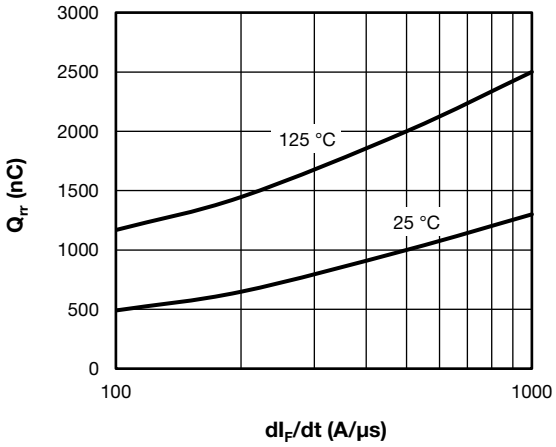
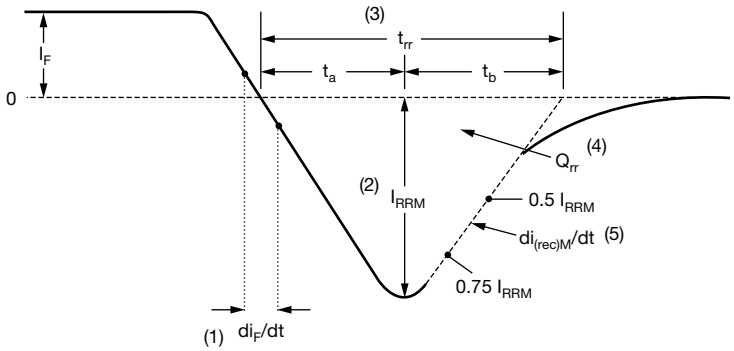


Fig. 8 - Typical Stored Charge vs. dI_F/dt



(1) di_F/dt - rate of change of current through zero crossing

(2) I_{RRM} - peak reverse recovery current

(3) t_{rr} - reverse recovery time measured from zero crossing point of negative going I_F to point where a line passing through 0.75 I_{RRM} and 0.50 I_{RRM} extrapolated to zero current.

(4) Q_{rr} - area under curve defined by t_{rr} and I_{RRM}

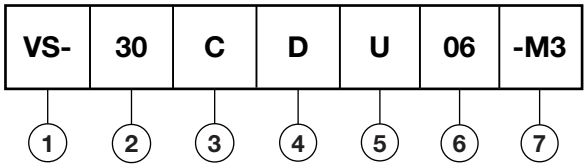
$$Q_{rr} = \frac{t_{rr} \times I_{RRM}}{2}$$

(5) $di_{(rec)M}/dt$ - peak rate of change of current during t_b portion of t_{rr}

Fig. 9 - Reverse Recovery Waveform and Definitions

ORDERING INFORMATION TABLE

Device code



1 - Vishay Semiconductors product
2 - Current rating (30 A)
3 - Circuit configuration:
C = common cathode
4 - D = SMPD package
5 - Process type,
U = ultrafast recovery
6 - Voltage code (06 = 600 V)
7 - -M3 = halogen-free, RoHS-compliant, and terminations lead (Pb)-free

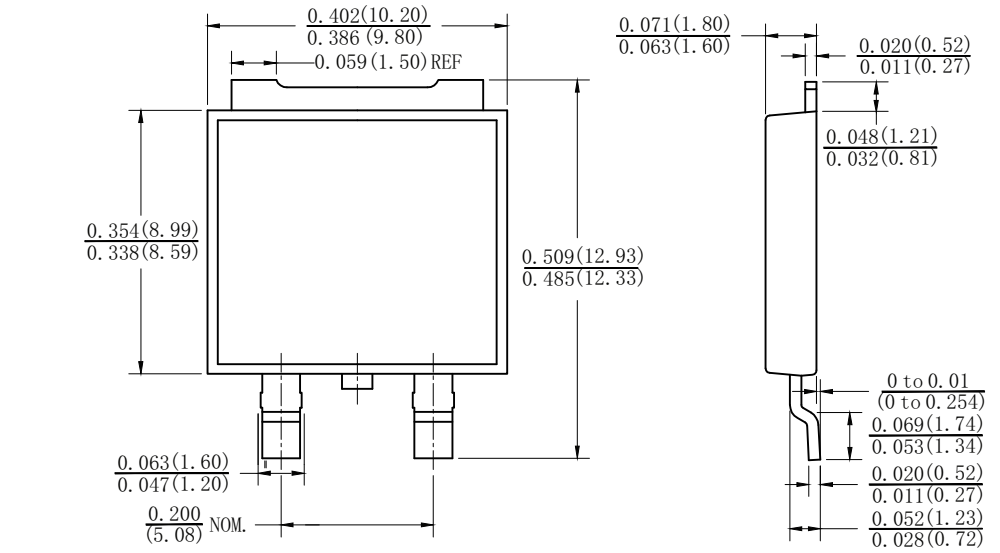
ORDERING INFORMATION (Example)			
PREFERRED P/N	**QUANTITY PER REEL**	**MINIMUM ORDER QUANTITY**	**PACKAGING DESCRIPTION**
VS-30CDU06-M3/I	2000	2000	13" diameter plastic tape and reel

LINKS TO RELATED DOCUMENTS	
Dimensions	www.vishay.com/doc?95604
Part marking information	www.vishay.com/doc?95566
Packaging information	www.vishay.com/doc?88869
SPICE model	www.vishay.com/doc?96576

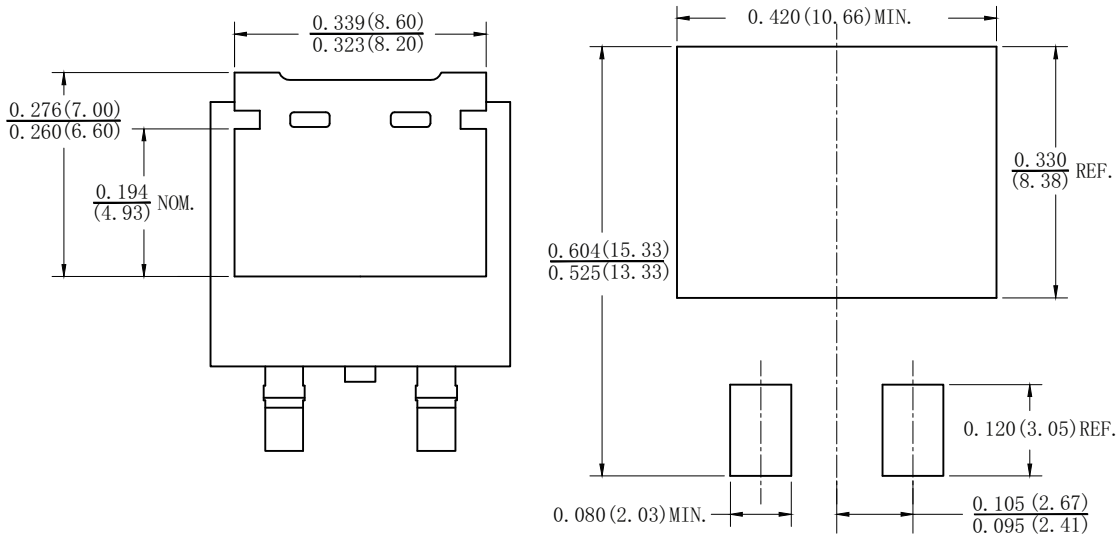
TO-263AC (SMPD)

DIMENSIONS in inches (millimeters)

TO-263AC (SMPD)



Mounting Pad Layout



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