A **de de** 750 V, 680 A S S D C **de 1** 6-P R 6 M 6

VE-T [™] D My6. NVH680S75L4SPC

Product Description The NVH680S75L4SPC is a power module from the VE−Trac[™] Pin Description

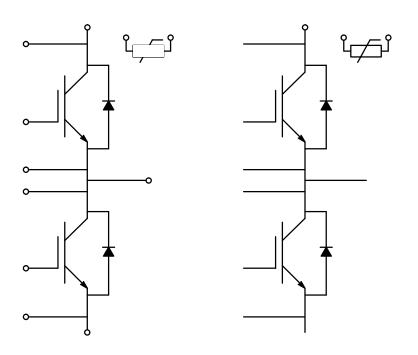


Figure 1. Pin Description

Symbol	Parameter			Rating		
Τ _{vj}	Operating Junction Temperature			-40 to 175		
T _{STG}	Storage Temperature			-40 to 125		
V _{ISO}	Isolation Voltage (DC, 0 Hz, 1 s)			4200		
L _{sCE}	Stray Inductance			10		
RCC'+EE'	Module Lead Resistance, Terminals – Chip			0.75		
G	Module Weight			700		
CTI	Comparative Tracking Index			>200		
d _{creep}	Creepage: Terminal to Heatsink Terminal to Terminal			9.0 9.0		
d _{clear}	Clearance: Terminal to Heatsink Terminal to Terminal			4.5 4.5		
Symbol	Parameters	Conditions	Min	Тур	Max	Unit
Δp	Pressure Drop in Cooling Circuit	10 L/min, 65°C, 50/50 EGW	-	95	-	mbar
P (Note 1)	Maximum Pressure in Cooling Loop (relative)	T _{Baseplate} < 40°C T _{Baseplate} > 40°C			2.5	-

MODULE CHARACTERISTICS (T_{vj} = 25°C, Unless Otherwise Specified)

Symbol	Parameters	Conditions		Min	Тур	Max	Unit
V _F	Diode Forward Voltage (Terminal)	I _F = 500 A	$T_{vj} = 25^{\circ}C$	-	1.60	1.85	V
	Diode Forward Voltage (Chip)	I _F = 500 A	$\begin{array}{l} T_{vj} = 25^{\circ}C \\ T_{vj} = 150^{\circ}C \\ T_{vj} = 175^{\circ}C \end{array}$	- - -	1.53 1.45 1.40	1.78 - -	
		I _F = 680 A	$T_{vj} = 25^{\circ}C$ $T_{vj} = 150^{\circ}C$ $T_{vj} = 175^{\circ}C$	_ _ _	1.65 1.61 1.57		
Err	Reverse Recovery Energy	$ I_{F} = 500 \text{ A}, \text{ V}_{R} = 400 \text{ V}, \\ V_{GE} = +15/-8 \text{ V}, \\ R_{g.on} = 4.7 \Omega $	$\begin{array}{l} \text{di/dt} = 3.5 \text{ A/nS}, \\ \text{T}_{\text{vj}} = 25^{\circ}\text{C} \\ \text{di/dt} = 3.0 \text{ A/nS}, \\ \text{T}_{\text{vj}} = 150^{\circ}\text{C} \end{array}$	-	3 8	-	mJ
			di/dt = 2.8 A/nS, T _{vj} = 175°C	-	10	-	
Q _{RR}	Recovered Charge	$I_F = 500 \text{ A}, V_R = 400 \text{ V},$ $V_{GE} = -8 \text{ V},$	$\begin{array}{l} \text{di/dt} = 3.5 \text{ A/nS}, \\ \text{T}_{\text{vj}} = 25^{\circ}\text{C} \end{array}$	-	11	-	μC
		$R_{g.on} = 4.7 \Omega$	di/dt = 3.0 A/nS, T _{vj} = 150°C	-	32	-	
			di/dt = 2.8 A/nS, T _{vj} = 175°C	-	38	-	
I _{rr}	Peak Reverse Recovery Current	I _F = 500 A, V _R = 400 V, V _{GE} = -8 V,	di/dt = 3.5 A/nS, T _{vi} = 25°C	-	141	-	A
		$R_{g.on} = 4.7 \Omega$	di/dt = 3.0 A/nS, T _{vj} = 150°C	-	247	-	
			di/dt = 2.8 A/nS, T _{vj} = 175°C	-	265	-	

CHARACTERISTICS OF INVERSE DIODE (T_{vj} = 25°C, Unless Otherwise Specified)

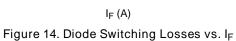
NTC SENSOR CHARACTERISTICS (Tvj = 25°C, Unless Otherwise Specified)

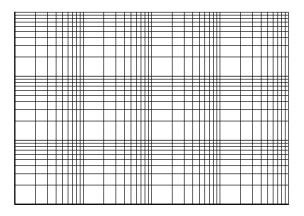
Symbol	Parameters	Conditions	Min	Тур	Max	Unit
R ₂₅ (Note 3)	Rated Resistance	$T_{C} = 25^{\circ}C$	-	5147	-	Ω
ΔR/R	Deviation of R ₁₀₅	$T_{C} = 105^{\circ}C, R_{105} = 472 \ \Omega$	5	-	5	%
P ₂₅	Power Dissipation	$T_{C} = 25^{\circ}C$	-	-	32	mW
B _{25/55}	B-Value	$R = R_{25} \exp [B_{25/55} 25/46]$	6 e	-		-

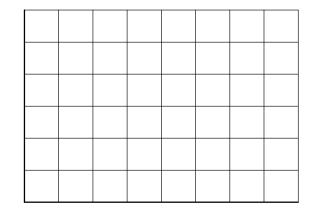
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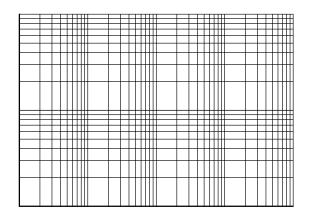
TYPICAL CHARACTERISTICS

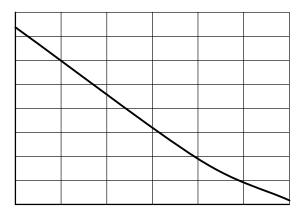




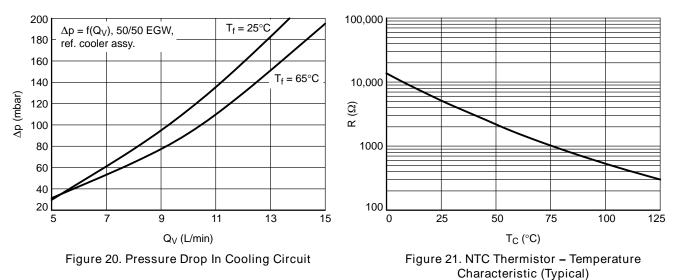


 $\mathsf{R}_{\mathsf{G}}\left(\Omega\right)$ Figure 15. Diode Switching Losses vs. R_{G}









TYPICAL CHARACTERISTICS

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PACKAGE DIMENSIONS

SSDC33, 154.50x92.0 (SPC) CASE 183AC ISSUE A

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