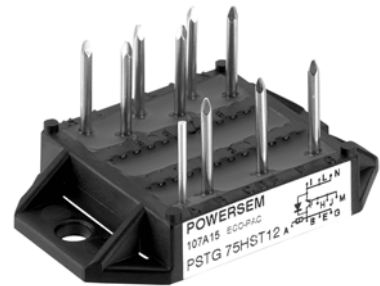
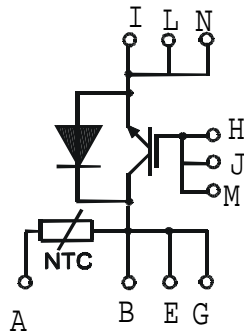


Powerline N-Channel Trench Gate- IGBT Module

PSTG 75HST12

V_{CES}	=	1200 V
$V_{CE(sat)}$	=	1.9 V
I_{C25}	=	109 A
I_{C75}	=	75 A
I_{CM}	=	225 A
t_{SC}	=	10 μs

Preliminary Data Sheet



Features

- Package with DCB ceramic base plate and soldering pins for PCB mounting
- Isolation voltage over 3000 V~
- Trench Gate
- Enhancement Mode N-Channel Device
- Non Punch through Structure
- High Switching Speed
- Low On-state Saturation Voltage
- High Input Impedance Simplifies Gate Drive
- Latch-Free Operation
- Fully Short Circuit Rated to 10 μ s
- Wide RBSOA

Applications

- High Frequency Inverters
- Motor Control
- Switch Mode Power Supplies
- High Frequency Welding
- UPS Systems
- PWM Drives

Symbol	Test Conditions	Maximum Ratings	
V_{CES}	$T_{VJ} = 25^{\circ}\text{C}$ to 150°C	1200	V
V_{GES}	continuous	± 20	V
I_{C25}	$T_C = 25^{\circ}\text{C}$;	109	A
I_{C75}	$T_C = 75^{\circ}\text{C}$;	75	A
I_{CM}	$T_C = 75^{\circ}\text{C}$;	225	A
P_{tot}	$T_C = 75^{\circ}\text{C}$	136	W
t_{SC}	$V_{CE} = 80 V_{CES}$, $R_G = 10 \Omega$, $V_{GE} = \pm 15 \text{ V}$ $T_{VJ} = 125^{\circ}\text{C}$, non-repetitive	10	μ s
T_{VJ}		-40...+150	$^{\circ}\text{C}$
T_{stg}		-40...+125	$^{\circ}\text{C}$
R_{thJC}	IGBT-per devices	0.55	K/W
R_{thJC}	Diode-per devices	1.33	K/W
V_{ISOL}	$I_{ISOL} \leq 1 \text{ mA}$, 50/60 Hz, $t = 1 \text{ min}$	3000	V~
M_D	Mounting torque (M4)	1.5-1.8	Nm
		typ.	min.
d_s	Creepage distance on surface	11.2	mm
d_A	Strike distance through air	4.0	mm
Weight	typ.	16	g

Caution: These devices are sensitive to electrostatic discharge. Users should observe proper ESD handling precautions.

Symbol	Test Conditions	Characteristic Value	
		typ.	max.
I_{CES}	$V_{CE} = V_{CES}, V_{GE} = 0 \text{ V}, T_{VJ} = 25^\circ\text{C}$	0.6	mA
			$T_{VJ} = 125^\circ\text{C}$
I_{GES}	$V_{CE} = 0 \text{ V}, V_{GE} = 20 \text{ V}$	1.5	μA
$V_{CE(sat)}$	$I_C = 75 \text{ A}, V_{GE} = 15 \text{ V}, T_{VJ} = 25^\circ\text{C}$	1.9	V
			$T_{VJ} = 125^\circ\text{C}$
$V_{GE(th)}$	$I_C = 1 \text{ A}, V_{GE} = V_{CE}$	7	V
$t_{d(on)}$		170	ns
t_r	Inductive load, $T_{VJ} = 125^\circ\text{C}$	17	ns
$t_{d(off)}$	$V_{CE} = 50\% V_{CES}, I_C = 25 \text{ A}$	340	ns
t_f	$R_G = 5 \Omega, V_{GE} = \pm 15 \text{ V}$	60	ns
E_{on}		2	mJ
E_{off}		3.5	mJ
C_{ies}	$V_{CE} = 75 \text{ V}, V_{GE} = 15 \text{ V}, f = 1 \text{ MHz}$	12000	pF
C_{oes}	$V_{CE} = 75 \text{ V}, V_{GE} = 15 \text{ V}, f = 1 \text{ MHz}$	510	pF
C_{ies}	$V_{CE} = 75 \text{ V}, V_{GE} = 15 \text{ V}, f = 1 \text{ MHz}$	75	pF
V_{FM}	$I_F = 75 \text{ A}, T_{VJ} = 25^\circ\text{C}$	1.9	V
			$T_{VJ} = 125^\circ\text{C}$
t_{rr}	$I_F = 75 \text{ A}, di_{RR} / dt = 600 \text{ A}/\mu\text{s}$	90	ns
I_{RRM}	$V_R = 50\% V_{RRM}$	36	A
NTC	25°C	470	$\text{k}\Omega$

Package style and outline

Dimensions in mm (1mm = 0.0394")

