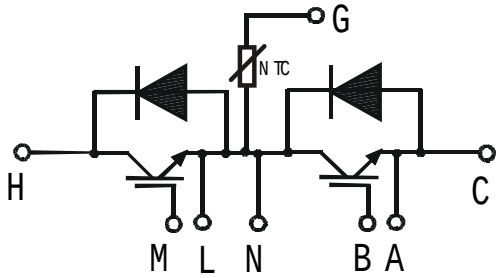
Powerline N-Channel Trench Gate- IGBT Module

PSTG 25HDT12

V_{CES} = 1200 V
$V_{CE(sat)}$ = 1.9 V
I_{C25} = 35 A
I_{C75} = 25 A
I_{CM} = 75 A
t_{SC} = 10 µs

Preliminary Data Sheet





Symbol	Test Conditions	Maximum Ratings	
V_{CES}	T_{VJ} = 25°C to 150°C	1200	V
V_{GES}	continous	±20	V
I_{C25}	T_C = 25°C;	35	A
I_{C75}	T_C = 75°C;	25	A
I_{CM}	T_C = 75°C;	75	A
P_{tot}	T_C = 75°C	45	W
t_{SC}	V_{CE} = 80 V_{CES}, R_G = 10 Ω, V_{GE} = ±15 V T_{VJ} = 125°C, non-repetitive	10	µs
T_{VJ}		-40...+150	°C
T_{stg}		-40...+125	°C
R_{thJC}	IGBT-per devices	1.65	K/W
R_{thJC}	Diode-per devices	4.0	K/W
V_{ISOL}	I_{ISOL} ≤ 1 mA, 50/60 Hz, t= 1 min. 180° sine	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

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 µs
- Wide RBSOA

Applications

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

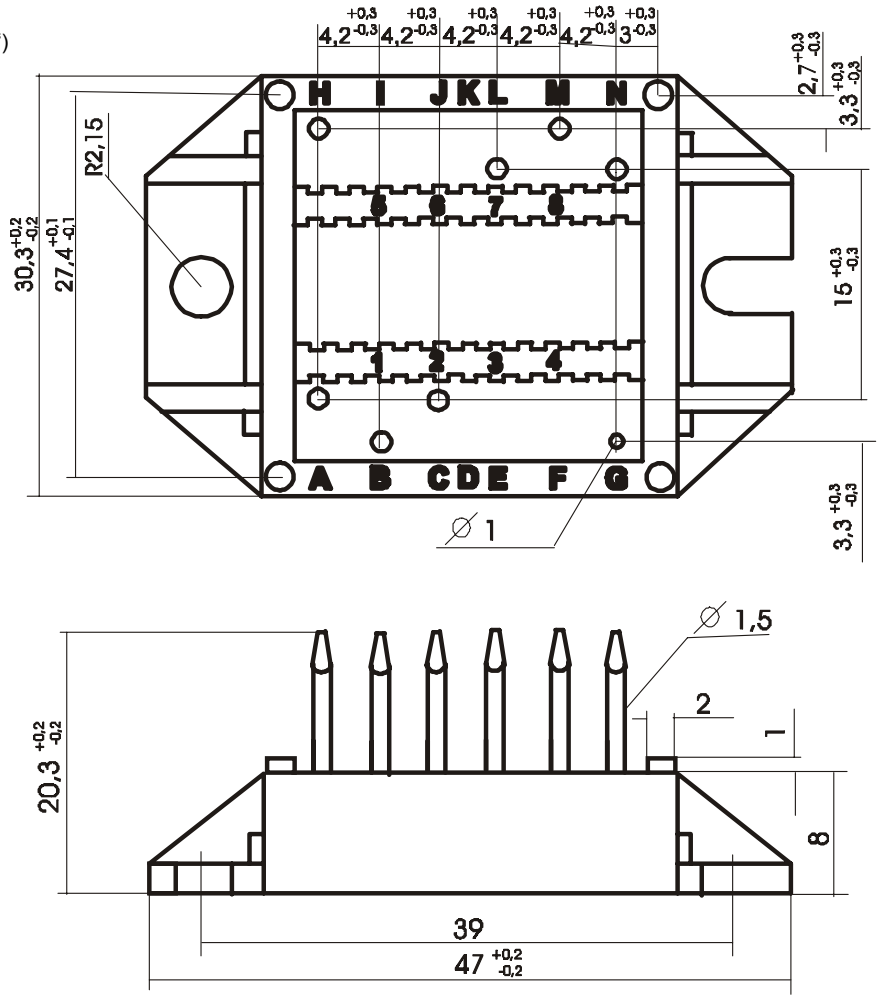
Caution: These devices are sensitive to electrostatic discharge. Users should observe proper ESD handling precautions.

POWERSEM GmbH, Walpersdorfer Str. 53
91126 D- Schwabach
Phone: 09122 - 9764-0 Fax.: 09122 - 9764-20

© 2005 POWERSEM reserves the right to change limits, test conditions and dimensions

Symbol	Test Conditions		Characteristic Value		
			typ.	max.	
I_{CES}	$V_{CE} = V_{CES}$, $V_{GE} = 0$ V,	$T_{VJ} = 25°C$		0.2	mA
		$T_{VJ} = 125°C$		1	mA
I_{GES}	$V_{CE} = 0$ V, $V_{GE} = \pm 20$ V			500	nA
$V_{CE(sat)}$	$I_C = 25$A, $V_{GE} = 15$ V	$T_{VJ} = 25°C$	1.9	2.3	V
		$T_{VJ} = 125°C$	2.1		V
$V_{GE(th)}$	$I_C = 25$A, $V_{GE} = V_{CE}$		7		V
$t_{d(on)}$			170		ns
t_r	Inductive load, $T_{VJ} = 125°C$		17		ns
$t_{d(off)}$	$V_{CE} = 50\%\ V_{CEs}$, $I_C = 25$ A		340		ns
t_f	$R_G = 5\ \Omega$, $V_{GE} = \pm 15$ V		60		ns
E_{on}			2		mJ
E_{off}			3.5		mJ
C_{ies}	$V_{CE} = 75$ V, $V_{GE} = 15$ V, f= 1 MHz		8000		pF
C_{oes}	$V_{CE} = 75$ V, $V_{GE} = 15$ V, f= 1 MHz		340		pF
C_{ies}	$V_{CE} = 75$ V, $V_{GE} = 15$ V, f= 1 MHz		50		pF
V_{FM}	$I_F = 25$ A,	$T_{VJ} = 25°C$		1.9	V
		$T_{VJ} = 125°C$		1.92	V
t_{rr}	$I_F = 25$ A, $di_{RR}/dt = 200$ A/µs,			90	ns
I_{RRM}	$V_R = 50\%\ V_{RRM}$			12	A
NTC	25°C			470	kΩ

Package style and outline
Dimensions in mm (1mm = 0.0394“)



© 2005 POWERSEM reserves the right to change limits, test conditions and dimensions