

Technical Information

PrimeSTACK™

2PS12017E44G35911



Preliminary data

Heat sink air cooled / Thermal data

			min	typ	max	units
Airflow	$T_{\text{Air}} = 20^{\circ}\text{C}$, $P_{\text{air}} = 1013\text{hPa}$, dry- and dust free, measured on side of heat sink. according to DIN 41882	$\Delta V / \Delta t_{\text{Air}}$	500			m^3/h
Air pressure drop		Δp_{Air}		190		Pa
Cooling air inlet temperature	heat sink temperature $> -25^{\circ}\text{C}$	T_{inlet}	-40		40	$^{\circ}\text{C}$

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IGBT data unit 2

Type			min	typ	max	units
Type	assumed					
collector-emitter saturation voltage	$I_c = 300A; V_{ge} = 15V; T_{vj} = 150^\circ C$	$V_{CE\ sat}$		2,45		V
parameter for linear model	$T_{vj} = 25^\circ C$	V_{ce1}		1,176		V
parameter for linear model	$T_{vj} = 25^\circ C$	r_{ce1}		2,582		mΩ
parameter for linear model	$T_{vj} = 150^\circ C$	V_{ce2}		1,082		V
parameter for linear model	$T_{vj} = 150^\circ C$	r_{ce2}		4,56		mΩ
turn-on / turn-off energy loss per pulse	$T_{vj} = 25^\circ C$	E_1		63 / 55		mJ
turn-on / turn-off energy loss per pulse	$T_{vj} = 150^\circ C$	E_2		93 / 100		mJ
thermal resistance, junction to case	per IGBT	R_{thjc}		0,083		K/W
thermal resistance, case to heatsink	per IGBT	R_{thch}		0,033		K/W

Diode data unit 2

Type			min	typ	max	units
Type	assumed					
forward voltage	$I_F = 300A; V_{ge} = 0V; T_{vj} = 150^\circ C$	V_F		1,95		V
parameter for linear model	$T_{vj} = 25^\circ C$	V_{F1}		1,158		V
parameter for linear model	$T_{vj} = 25^\circ C$	r_{F1}		2,139		mΩ
parameter for linear model	$T_{vj} = 150^\circ C$	V_{F2}		1,062		V
parameter for linear model	$T_{vj} = 150^\circ C$	r_{F2}		2,959		mΩ
reverse recovery energy	$T_{vj} = 25^\circ C$	E_{rec1}		28		mJ
reverse recovery energy	$T_{vj} = 150^\circ C$	E_{rec2}		68		mJ
thermal resistance, junction to case	per Diode	R_{thjc}		0,13		K/W
thermal resistance, case to heatsink	per Diode	R_{thch}		0,051		K/W

Environmental conditions

			min	typ	max	units
Storage temperature		T_{stor}	-40		85	°C
Ambient temperature		T_{amb}	-25		55	°C
Operating temperature	see chapter Heat sink air cooled / Thermal data					
Cooling air velocity (PCB)		$V_{Air\ PCB}$	2,0			m/s
Air pressure	standard atmosphere	p_{Air}	900		1100	hPa
Humidity	no condensation	Rel. F	5		85	%
Installation height			0		1000	m
Vibration	according to IEC60721				5	m/s ²
Shock	according to IEC60721				40	m/s ²
Protection degree				IP00		
Pollution degree				2		
Torque at DC Terminals		M_{DC}	6,0		10,0	Nm
Torque at AC Terminals		M_{AC}	16,0		20,0	Nm
Dimensions	width × depth × height		216	360	288	mm
Weight with heat sink	approximation			18,0		kg

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