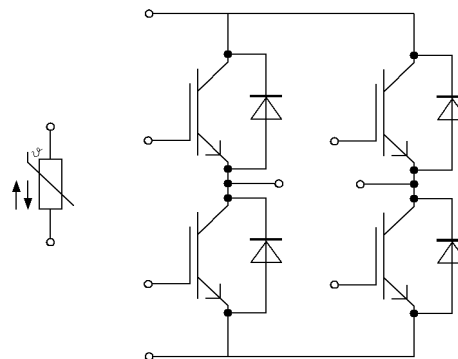


EconoDUAL™2 模块 采用第二高速IGBT和碳化硅二极管针对高频应用 带有温度检测NTC
EconoDUAL™2 module with the fast IGBT2 for high-frequency switching and NTC



$V_{CES} = 1200V$
 $I_{C\ nom} = 50A / I_{CRM} = 100A$

典型应用

- 高频开关应用

电气特性

- 高短路能力，自限制短路电流
- 低开关损耗
- V_{CESat} 带正温度系数

机械特性

- 绝缘的基板
- 标封装

Typical Applications

- High Frequency Switching Application

Electrical Features

- High Short Circuit Capability, Self Limiting Short Circuit Current
- Low Switching Losses
- V_{CESat} with positive Temperature Coefficient

Mechanical Features

- Isolated Base Plate
- Standard Housing

Module Label Code

Barcode Code 128



DMX - Code



Content of the Code

Content of the Code	Digit
Module Serial Number	1 - 5
Module Material Number	6 - 11
Production Order Number	12 - 19
Datecode (Production Year)	20 - 21
Datecode (Production Week)	22 - 23

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IGBT, 逆变器 / IGBT, Inverter

最大额定值 / Maximum Rated Values

集电极 - 发射极电压 Collector-emitter voltage	$T_{vj} = 25^{\circ}\text{C}$	V_{CES}	1200	V
连续集电极直流电流 Continuous DC collector current	$T_C = 70^{\circ}\text{C}, T_{vj\max} = 150^{\circ}\text{C}$ $T_C = 25^{\circ}\text{C}, T_{vj\max} = 150^{\circ}\text{C}$	$I_{C\text{nom}}$ I_C	50 70	A A
集电极重复峰值电流 Repetitive peak collector current	$t_P = 1\text{ ms}$	I_{CRM}	100	A
总功率损耗 Total power dissipation	$T_C = 25^{\circ}\text{C}, T_{vj\max} = 150$	P_{tot}	355	W
栅极 - 发射极峰值电压 Gate-emitter peak voltage		V_{GES}	+/-20	V

特征值 / Characteristic Values

			min.	typ.	max.		
集电极 - 发射极饱和电压 Collector-emitter saturation voltage	$I_C = 50\text{ A}, V_{GE} = 15\text{ V}$ $I_C = 50\text{ A}, V_{GE} = 15\text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	$V_{CE\text{sat}}$	3,20 3,85	3,75	V V	
栅极阈值电压 Gate threshold voltage	$I_C = 2,00\text{ mA}, V_{CE} = V_{GE}, T_{vj} = 25^{\circ}\text{C}$		$V_{G\text{Eth}}$	4,5	5,5	6,5	V
栅极电荷 Gate charge	$V_{GE} = -15\text{ V} \dots +15\text{ V}$		Q_G	0,60			μC
内部栅极电阻 Internal gate resistor	$T_{vj} = 25^{\circ}\text{C}$		$R_{G\text{int}}$	5,0			Ω
输入电容 Input capacitance	$f = 1\text{ MHz}, T_{vj} = 25^{\circ}\text{C}, V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}$		C_{ies}	3,40			nF
反向传输电容 Reverse transfer capacitance	$f = 1\text{ MHz}, T_{vj} = 25^{\circ}\text{C}, V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}$		C_{res}	0,21			nF
集电极-发射极截止电流 Collector-emitter cut-off current	$V_{CE} = 1200\text{ V}, V_{GE} = 0\text{ V}, T_{vj} = 25^{\circ}\text{C}$		I_{CES}		1,0		mA
栅极-发射极漏电流 Gate-emitter leakage current	$V_{CE} = 0\text{ V}, V_{GE} = 20\text{ V}, T_{vj} = 25^{\circ}\text{C}$		I_{GES}		400		nA
开通延迟时间(电感负载) Turn-on delay time, inductive load	$I_C = 50\text{ A}, V_{CE} = 600\text{ V}$ $V_{GE} = \pm 15\text{ V}$ $R_{G\text{on}} = 13\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	$t_{d\text{on}}$	0,12 0,13			μs μs
上升时间(电感负载) Rise time, inductive load	$I_C = 50\text{ A}, V_{CE} = 600\text{ V}$ $V_{GE} = \pm 15\text{ V}$ $R_{G\text{on}} = 13\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	t_r	0,05 0,06			μs μs
关断延迟时间(电感负载) Turn-off delay time, inductive load	$I_C = 50\text{ A}, V_{CE} = 600\text{ V}$ $V_{GE} = \pm 15\text{ V}$ $R_{G\text{off}} = 13\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	$t_{d\text{off}}$	0,31 0,36			μs μs
下降时间(电感负载) Fall time, inductive load	$I_C = 50\text{ A}, V_{CE} = 600\text{ V}$ $V_{GE} = \pm 15\text{ V}$ $R_{G\text{off}} = 13\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	t_f	0,02 0,03			μs μs
开通损耗能量(每脉冲) Turn-on energy loss per pulse	$I_C = 50\text{ A}, V_{CE} = 600\text{ V}, L_S = 30\text{ nH}$ $V_{GE} = \pm 15\text{ V}, di/dt = 1400\text{ A}/\mu\text{s}$ $R_{G\text{on}} = 13\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	E_{on}	3,30 6,00			mJ mJ
关断损耗能量(每脉冲) Turn-off energy loss per pulse	$I_C = 50\text{ A}, V_{CE} = 600\text{ V}, L_S = 30\text{ nH}$ $V_{GE} = \pm 15\text{ V}, du/dt = 7000\text{ V}/\mu\text{s}$ $R_{G\text{off}} = 13\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	E_{off}	1,70 2,50			mJ mJ
短路数据 SC data	$V_{GE} \leq 15\text{ V}, V_{CC} = 900\text{ V}$ $V_{CE\text{max}} = V_{CES} - L_{SCE} \cdot di/dt$	$t_P \leq 10\ \mu\text{s}, T_{vj} = 125^{\circ}\text{C}$	I_{SC}	300			A
结 - 外壳热阻 Thermal resistance, junction to case	每个 IGBT / per IGBT		R_{thJC}		0,35		K/W
外壳 - 散热器热阻 Thermal resistance, case to heatsink	每个 IGBT / per IGBT $\lambda_{\text{Paste}} = 1\text{ W}/(\text{m}\cdot\text{K}) / \lambda_{\text{grease}} = 1\text{ W}/(\text{m}\cdot\text{K})$		R_{thCH}	0,12			K/W
在开关状态下温度 Temperature under switching conditions			$T_{vj\text{op}}$	-40	125		$^{\circ}\text{C}$

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