



$V_{CES} = 1200V$
 $I_{C\ nom} = 75A / I_{CRM} = 150A$

Typische Anwendungen

- 3-Level-Applikationen
- Solar Anwendungen

Elektrische Eigenschaften

- High Speed IGBT H3
- Niederinduktives Design
- Niedrige Schaltverluste
- Niedriges V_{CEsat}

Mechanische Eigenschaften

- 3 kV AC 1min Isolationsfestigkeit
- Al_2O_3 Substrat mit kleinem thermischen Widerstand
- Kompaktes Design
- PressFIT Verbindungstechnik
- Robuste Montage durch integrierte Befestigungsklammern

Typical Applications

- 3-level-applications
- Solar applications

Electrical Features

- High speed IGBT H3
- Low inductive design
- Low switching losses
- Low V_{CEsat}

Mechanical Features

- 3 kV AC 1min insulation
- Al_2O_3 substrate with low thermal resistance
- Compact design
- PressFIT contact technology
- Rugged mounting due to integrated mounting clamps

Module Label Code

Barcode Code 128



DMX - 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, T1-T4 / IGBT, T1-T4

Höchstzulässige Werte / Maximum Rated Values

Kollektor-Emitter-Sperrspannung Collector-emitter voltage	$T_{vj} = 25^{\circ}\text{C}$	V_{CES}	1200	V
Implementierter Kollektor-Strom Implemented collector current		I_{CN}	75	A
Kollektor-Dauergleichstrom Continuous DC collector current	$T_C = 100^{\circ}\text{C}, T_{vj\max} = 175^{\circ}\text{C}$ $T_C = 25^{\circ}\text{C}, T_{vj\max} = 175^{\circ}\text{C}$	$I_{C\text{nom}}$ I_C	30 45	A A
Periodischer Kollektor-Spitzenstrom Repetitive peak collector current	$t_P = 1\text{ ms}$	I_{CRM}	150	A
Gesamt-Verlustleistung Total power dissipation	$T_C = 25^{\circ}\text{C}, T_{vj\max} = 175^{\circ}\text{C}$	P_{tot}	275	W
Gate-Emitter-Spitzenspannung Gate-emitter peak voltage		V_{GES}	+/-20	V

Charakteristische Werte / Characteristic Values

			min.	typ.	max.	
Kollektor-Emitter-Sättigungsspannung Collector-emitter saturation voltage	$I_C = 30\text{ A}, V_{GE} = 15\text{ V}$ $I_C = 30\text{ A}, V_{GE} = 15\text{ V}$ $I_C = 30\text{ A}, V_{GE} = 15\text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	$V_{CE\text{ sat}}$	1,45 1,55 1,60	1,70	V V V
Gate-Schwellenspannung Gate threshold voltage	$I_C = 2,60\text{ mA}, V_{CE} = V_{GE}, T_{vj} = 25^{\circ}\text{C}$		$V_{G\text{Eth}}$	5,00	5,80	6,50 V
Gateladung Gate charge	$V_{GE} = -15\text{ V} \dots +15\text{ V}$		Q_G	0,57		μC
Interner Gatewiderstand Internal gate resistor	$T_{vj} = 25^{\circ}\text{C}$		$R_{G\text{int}}$	0,0		Ω
Eingangskapazität Input capacitance	$f = 1\text{ MHz}, T_{vj} = 25^{\circ}\text{C}, V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}$		C_{ies}	4,40		nF
Rückwirkungskapazität 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}	0,235		nF
Kollektor-Emitter-Reststrom 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
Gate-Emitter-Reststrom Gate-emitter leakage current	$V_{CE} = 0\text{ V}, V_{GE} = 20\text{ V}, T_{vj} = 25^{\circ}\text{C}$		I_{GES}		100	nA
Einschaltverzögerungszeit, induktive Last Turn-on delay time, inductive load	$I_C = 30\text{ A}, V_{CE} = 400\text{ V}$ $V_{GE} = 15\text{ V}$ $R_{G\text{on}} = 6,8\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	$t_{d\text{ on}}$	0,03 0,03 0,03		μs μs μs
Anstiegszeit, induktive Last Rise time, inductive load	$I_C = 30\text{ A}, V_{CE} = 400\text{ V}$ $V_{GE} = 15\text{ V}$ $R_{G\text{on}} = 6,8\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	t_r	0,01 0,012 0,012		μs μs μs
Abschaltverzögerungszeit, induktive Last Turn-off delay time, inductive load	$I_C = 30\text{ A}, V_{CE} = 400\text{ V}$ $V_{GE} = 15\text{ V}$ $R_{G\text{off}} = 6,8\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	$t_{d\text{ off}}$	0,25 0,32 0,34		μs μs μs
Fallzeit, induktive Last Fall time, inductive load	$I_C = 30\text{ A}, V_{CE} = 400\text{ V}$ $V_{GE} = 15\text{ V}$ $R_{G\text{off}} = 6,8\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	t_f	0,025 0,04 0,045		μs μs μs
Einschaltverlustenergie pro Puls Turn-on energy loss per pulse	$I_C = 30\text{ A}, V_{CE} = 400\text{ V}, L_S = 40\text{ nH}$ $V_{GE} = 15\text{ V}, di/dt = 2600\text{ A}/\mu\text{s} (T_{vj} = 150^{\circ}\text{C})$ $R_{G\text{on}} = 6,8\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	E_{on}	0,40 0,60 0,70		mJ mJ mJ
Abschaltverlustenergie pro Puls Turn-off energy loss per pulse	$I_C = 30\text{ A}, V_{CE} = 400\text{ V}, L_S = 40\text{ nH}$ $V_{GE} = 15\text{ V}, du/dt = 2400\text{ V}/\mu\text{s} (T_{vj} = 150^{\circ}\text{C})$ $R_{G\text{off}} = 6,8\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	E_{off}	1,05 1,60 1,75		mJ mJ mJ
Kurzschlußverhalten SC data	$V_{GE} \leq 15\text{ V}, V_{CC} = 800\text{ V}$ $V_{CE\text{max}} = V_{CES} - L_{S\text{CE}} \cdot di/dt$ $t_P \leq 10\ \mu\text{s}, T_{vj} = 150^{\circ}\text{C}$		I_{SC}	270		A
Wärmewiderstand, Chip bis Gehäuse Thermal resistance, junction to case	pro IGBT / per IGBT		R_{thJC}	0,500	0,550	K/W

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