



CCG200T75L

CHONG QING CLOUDCHILD TECHNOLOGY CO.,LTD

IGBT Plastic-Encapsulate

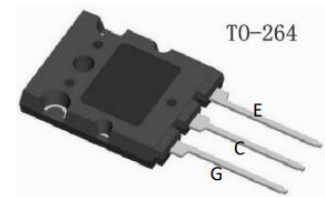
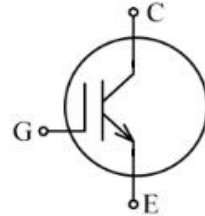
Quality Requirement Category:Automotive

Features:

- 750V Trench & Field Stop technology
- Low conduction and switching losses
- V_{CEsat} positive temperature coefficient
- Short circuit ruggedness 10 μ s

Applications:

- Automobile motor drives
- Lighting
- General inverter



Type	V_{CE}	I_C	T_{jmax}	Package
CCG200T75L	750V	200A	175 $^{\circ}$ C	TO264

Maximum Rated Values

Parameter	Symbol	Value	Unit
Collector-emitter voltage, $T_j \geq 25^{\circ}$ C	V_{CE}	750	V
Collector current, $T_C = 25^{\circ}$ C	I_C	400	A
Collector current, $T_C = 100^{\circ}$ C	I_C	200	A
Pulsed collector current, t_p limited by T_{jmax}	I_{Cpuls}	800	A
Gate-emitter voltage	V_{GE}	± 20	V
Short Circuit withstand time, $V_{GE} = 15V, V_{CC} \leq 400V, T_j \leq 150^{\circ}$ C	t_{sc}	10	μ s
Total power dissipation, $T_C = 25^{\circ}$ C	P_{tot}	500	W
Operating junction temperature	T_{jop}	-55 ~ 150	$^{\circ}$ C
Storage temperature	T_{stg}	-55 ~ 150	$^{\circ}$ C



CCG200T75L

Thermal Resistance

Parameter	Symbol	Value	Unit
IGBT thermal resistance junction to case	$R_{th(j-c)}$	0.3	$^{\circ}\text{C}/\text{W}$
Thermal resistance junction to ambient	$R_{th(j-a)}$	40	$^{\circ}\text{C}/\text{W}$

Static Characteristics, $T_j = 25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Collector-emitter breakdown voltage	$V_{(BR)CES}$	$V_{GE}=0\text{V}$, $I_C=100\mu\text{A}$	750			V
Collector-emitter saturation voltage	V_{CESat}	$V_{GE}=15\text{V}$ $I_C=200\text{A}$	25 $^{\circ}\text{C}$	1.9	2.3	V
			150 $^{\circ}\text{C}$	2.35		V
Gate-emitter threshold voltage	$V_{GE(th)}$	$I_C=4\text{mA}$, $V_{GE}=V_{CE}$	5	6	7	V
Zero gate voltage collector current	I_{CES}	$V_{CE}=750\text{V}$, $V_{GE}=0\text{V}$			100	μA
Gate-emitter leakage current	I_{GES}	$V_{CE}=0\text{V}$, $V_{GE}=\pm 20\text{V}$	-200		200	nA

Switching Characteristics, $T_j = 25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Turn-on delay time	$t_{d(on)}$	$V_{CC}=400\text{V}$ $I_C=200\text{A}$ $V_{GE}=-7.5\sim 15\text{V}$ $R_g=4.7\ \Omega$	25 $^{\circ}\text{C}$		108	ns
			150 $^{\circ}\text{C}$		114	ns
Rise time	t_r		25 $^{\circ}\text{C}$		50	ns
			150 $^{\circ}\text{C}$		56	ns
Turn-on energy	E_{on}		25 $^{\circ}\text{C}$		4.6	mJ
			150 $^{\circ}\text{C}$		6.5	mJ
Turn-off delay time	$t_{d(off)}$		25 $^{\circ}\text{C}$		280	ns
			150 $^{\circ}\text{C}$		350	ns
Fall time	t_f		25 $^{\circ}\text{C}$		135	ns
			150 $^{\circ}\text{C}$		220	ns
Turn-off energy	E_{off}	25 $^{\circ}\text{C}$		8.5	mJ	
		150 $^{\circ}\text{C}$		12	mJ	



CCG200T75L

NOTICE

Cloudchild reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Cloudchild does not assume any liability arising out of the application or use of any product described herein.

ChongQing Cloudchild Technology Co., Ltd. (short for Cloudchild) exerts the greatest possible effort to ensure high quality and reliability. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing Cloudchild products, to comply with the standards of safety in making a safe design for the entire system, including redundancy, fire-prevention measures, and malfunction prevention, to prevent any accidents, fires, or community damage that may ensue. In developing your designs, please ensure that Cloudchild products are used within specified operating ranges as set forth in the most recent Cloudchild products specifications.



CCG200T75L

Date of change	Rev #	revise content
2022/6/16	A/0	/