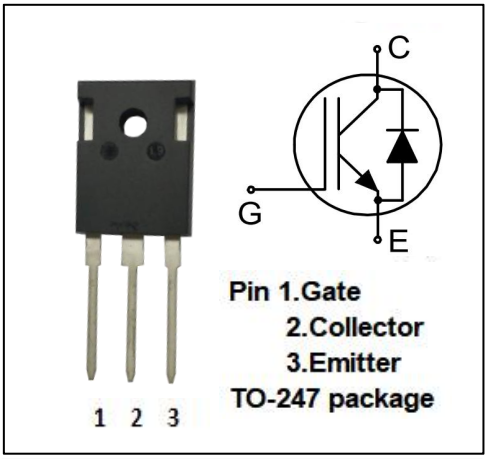
AUIRGP50B60PD1

IGBT

DESCRIPTION

- Low Saturation Voltage:V_{CE}(sat)=2.35V（Max)@I_C=33A
- High Current Capability
- High Input Impedance
- Fast Switching

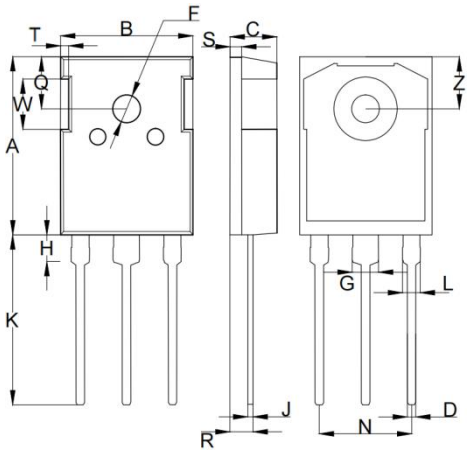


APPLICATIONS

- Ultrafast tail current shutoff
- Automotive Chargers
- High Voltage Auxiliaries

ABSOLUTE MAXIMUM RATINGS

SYMBOL	PARAMETER	VALUE	UNIT
V_{CES}	Collector-Emitter Voltage	600	V
V_{GES}	Gate-Emitter Voltage	±20	V
I_C	Collector Current-Continuous @ T_C=25℃	75	A
I_C	Collector Current-Continuous @ T_C=100℃	45	A
I_{CM}	Pulsed Collector Current@ T_C=150℃	150	A
I_F	Diode Continuous Forward Current @ T_C=25℃	40	A
I_F	Diode Continuous Forward Current @ T_C=100℃	15	A
I_{FM}	Maximum Repetitive Forward Current	60	A
P_D	Power Dissipation , T_C=25℃	390	W
P_D	Power Dissipation , T_C=100℃	156	W
T_j	Max. Operating Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃



DIM	mm		
	MIN	TYP.	MAX
A	19.80	20.65	21.50
B	15.40	15.65	15.90
C	4.70	5.00	5.30
D	0.90	1.08	1.26
F	3.50	3.70	3.90
G	2.70	3.00	3.30
H	3.90	4.00	4.10
J	0.50	0.60	0.70
K	19.50	20.00	20.50
L	1.90	2.05	2.20
N	10.80	10.90	11.00
Q	6.00	6.15	6.30
R	2.90	3.10	3.30
S	1.80	2.00	2.20
T	2.15	2.25	2.35
W	4.90	5.00	5.10
Z	6.00	6.15	6.30

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case IGBT	0.32	℃/W

ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	MIN	TYPE	MAX	UNIT
V_{CES}	Collector-Emitter Breakdown Voltage	V_{GE}=0; I_C= 0.5mA	600	--	--	V
$V_{GE(TH)}$	Gate-Emitter Threshold Voltage	V_{GE}= V_{CE}; I_C=0.25mA	3.0	--	5.0	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 33A; V_{CE}= 15V, T_J=25℃	--	--	2.35	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 33A; V_{CE}= 15V, T_J=125℃	--	--	2.95	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 50A; V_{CE}= 15V, T_J=25℃	--	--	2.85	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 50A; V_{CE}= 15V, T_J=125℃	--	--	3.60	V
I_{CES}	Zero Gate Voltage Collector Current	V_{CE}=600V; V_{GE}=0	-	--	500	uA
I_{GES}	Gate-Emitter Leakage Current	V_{GE}=±20V; V_{CE}=0	--	--	±100	nA
C_{ies}	Input Capacitance	V_{GE} = 0V, V_{CE} = 30V, f = 1.0MHz	--	3658	--	pF
C_{oes}	Output Capacitance		--	330	--	
C_{res}	Reverse Transfer Capacitance		--	60	--	
Q_g	Total Gate Charge	V_{GE} = 15V, I_c = 33A, V_{CE} = 400V	--	200	--	nC
Q_{ge}	Gate-Emitter Charge		--	72	--	
Q_{gc}	Gate-Collector Charge		--	33	--	

SYMBOL	PARAMETER	CONDITIONS	MIN	TYPE	MAX	UNIT
$t_{d(on)}$	Turn-on Delay Time	V_{CE}=390V, V_{GE} = 15V, I_c = 33A, R_G=3.3Ω T_J=25℃	--	31	--	ns
t_r	Turn-on Rise Time		--	11	--	
$t_{d(off)}$	Turn-off Delay Time		--	132	--	
t_f	Turn-off Fall Time		--	11	--	
E_{on}	Turn-on switching losses			253		uJ
E_{off}	Turn-off switching losses			376		
$t_{d(on)}$	Turn-on Delay Time	V_{CE}=390V, V_{GE} = 15V, I_c =33A, R_G=3.3Ω T_J=125℃	--	26	--	ns
t_r	Turn-on Rise Time		--	13	--	
$t_{d(off)}$	Turn-off Delay Time		--	145	--	
t_f	Turn-off Fall Time			14	--	
E_{on}	Turn-on switching losses			570	--	uJ
E_{off}	Turn-off switching losses		--	475	--	

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