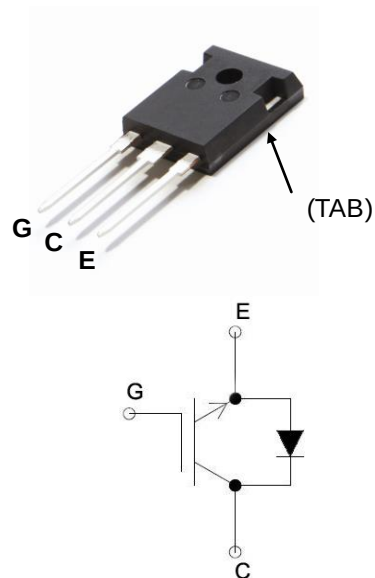


**Name: AnR25IGB12D****Applications**

- AC Inverter drives
- UPS
- Welding Power Supplies

Features

- Native Components
- Structure NPT
- Low $V_{CE(sat)}$
- High short circuit capability
- Easy paralleling
- Positive temperature coefficient of $V_{CE(sat)}$
- Low C_{ies} , C_{oes} , C_{res}
- 100% control of the effect of double current
- Insulated base plate for heat dissipation
- Self-restraint on the short-circuit currents



G	C	E	TAB
Gate	Collector	Emitter	Collector

Product Summary

Part Number	V_{CE}	$V_{CE(sat)}$	I_C	Packaging
AnR25IGB12D	1200 V	2.5 V	25 A	Tube

Table 1. Absolute Maximum Ratings

	Parameter	Value	Units
V_{CES}	Collector-to-Emitter Voltage	1200	V
V_{GES}	Gate-to-Emitter Voltage	± 20	V
I_C , $T_C=25\text{ }^{\circ}\text{C}$	Collector Current	22	A
I_{CM} , $T_C=25\text{ }^{\circ}\text{C}$	Pulsed Collector Current	44	
I_C , $T_C=90\text{ }^{\circ}\text{C}$	Collector Current	25	
I_{CM} , $T_C=90\text{ }^{\circ}\text{C}$	Pulsed Collector Current	50	
P_{tot}	Power dissipation $T_C=25\text{ }^{\circ}\text{C}$	145	W
T_j	Operating Temperature	-55 to $+150$	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55 to $+125$	
t_{sc}	Short circuit withstand time $V_{GE}=15\text{ V}$, $V_{CC}\leq 1200\text{ V}$, $T_j=150\text{ }^{\circ}\text{C}$	10	μs
	Weight	6 (Typical)	g

**Table 2. Thermal resistance**

Symbol	Parameter	Min	Max	Units	Test Conditions
R_{thJC}	Junction-to-Case	–	0.85	°C/W	
R_{thJA}	Junction-to-Ambient	–	40		

Table 3. Electrical Characteristics @ $T_J=25^\circ\text{C}$

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
$V_{CE(sat)}$	Collector-to-Emitter Saturation Voltage	–	2.4	2.5	V	$V_{GE}=15\text{ V}$, $I_C=25\text{ A}$
		–	2.7	3.0		$V_{GE}=15\text{ V}$, $I_C=25\text{ A}$, $T_J=125^\circ\text{C}$
$V_{GE(th)}$	Gate Threshold Voltage	3.0	4.5	6.0	V	$V_{CE}=V_{GE}$, $I_C=1\text{ mA}$
I_{CES}	Zero Gate Voltage Collector Current	–	0.01	0.1	mA	$V_{CE}=1200\text{ V}$, $V_{GE}=0\text{ V}$
		–	0.5	2.0		$V_{CE}=1200\text{ V}$, $V_{GE}=0\text{ V}$, $T_J=125^\circ\text{C}$
$I_{GES(F)}$	Gate-to-Emitter Leakage Forward	–	10	100	nA	$V_{GE}=20\text{ V}$
		–	20	150		$V_{GE}=20\text{ V}$, $T_J=125^\circ\text{C}$
$I_{GES(R)}$	Gate-to-Emitter Leakage Reverse	–100	–10	–		$V_{GE}=-20\text{ V}$
		–150	–20	–		$V_{GE}=-20\text{ V}$, $T_J=125^\circ\text{C}$
C_{ies}	Input Capacitance	–	1700	–	pF	$V_{GE}=0\text{ V}$, $V_{CE}=25\text{ V}$, $f=1\text{ MHz}$
C_{oes}	Output Capacitance	–	220	–		
C_{res}	Reverse Transfer Capacitance	–	90	–		
$t_{d(On)}$	Turn-On Delay Time	–	40	–	ns	$V_{CC}=600\text{ V}$, $I_C=25\text{ A}$, $V_{GE}=\pm 15\text{ V}$, $R_G=10\ \Omega$, $T_J=25^\circ\text{C}$, Inductive Load
t_r	Rise Time	–	35	–		
$t_{d(Off)}$	Turn-Off Delay Time	–	400	–		
t_f	Fall Time	–	30	–		
E_{on}	Turn-On Energy	–	2.4	–	mJ	$V_{CC}=600\text{ V}$, $I_C=25\text{ A}$, $V_{GE}=\pm 15\text{ V}$, $R_G=10\ \Omega$, $T_J=25^\circ\text{C}$, Inductive Load
E_{off}	Turn-Off Energy	–	1.9	–		

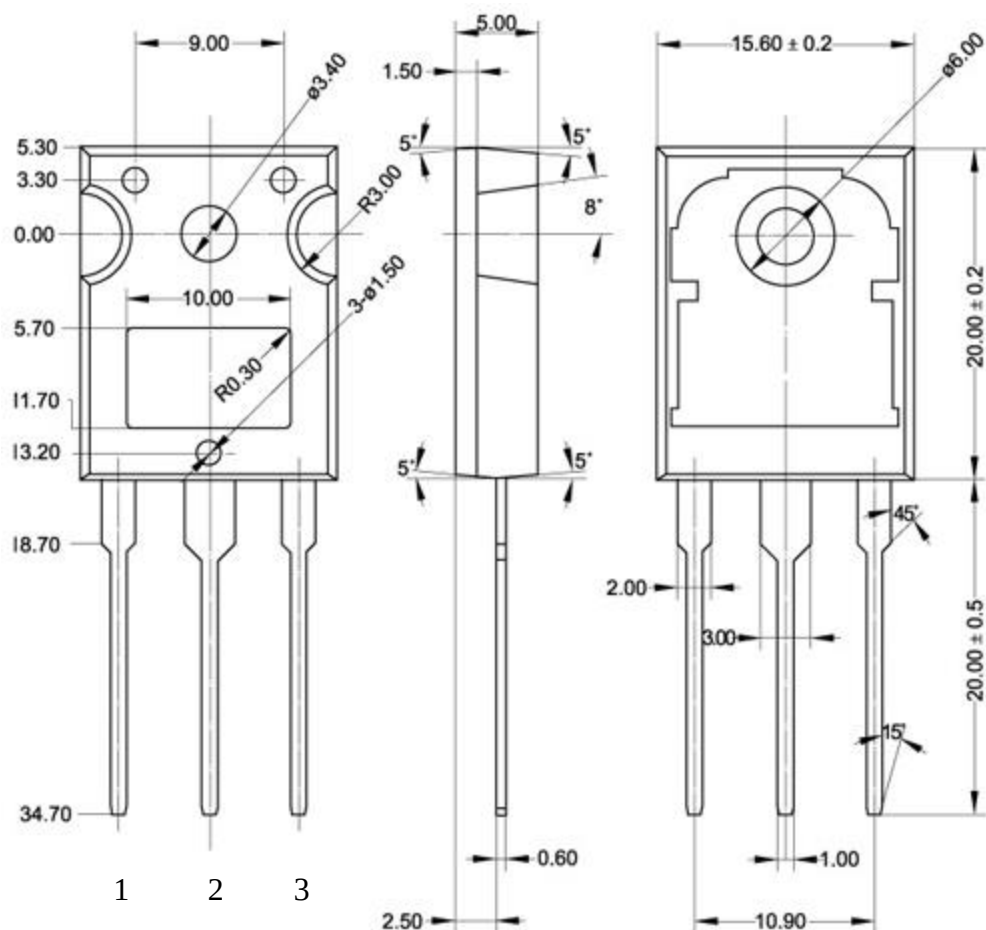
Table 4. Anti-Parallel Diode Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
V_F	Forward Voltage	–	1.9	2.5	V	$I_F=25\text{ A}$, $V_{GE}=0\text{ V}$
I_{rrm}	Maximum Reverse Recovery Current	–	20	–	A	$I_F=25\text{ A}$, $di_F/dt=0.4\text{ A/ns}$, $V_{GE}=0\text{ V}$, $T_J=25^\circ\text{C}$
t_{rr}	Diode Reverse Recovery Time	–	140	300	ns	
Q_{rr}	Diode Reverse Recovery Charge	–	1.4	–	μC	

Precious metal content into 1000 pieces:

Gold _____ g;

Silver _____ g.

**Case Outline and Dimensions - TO-247****NOTE:**

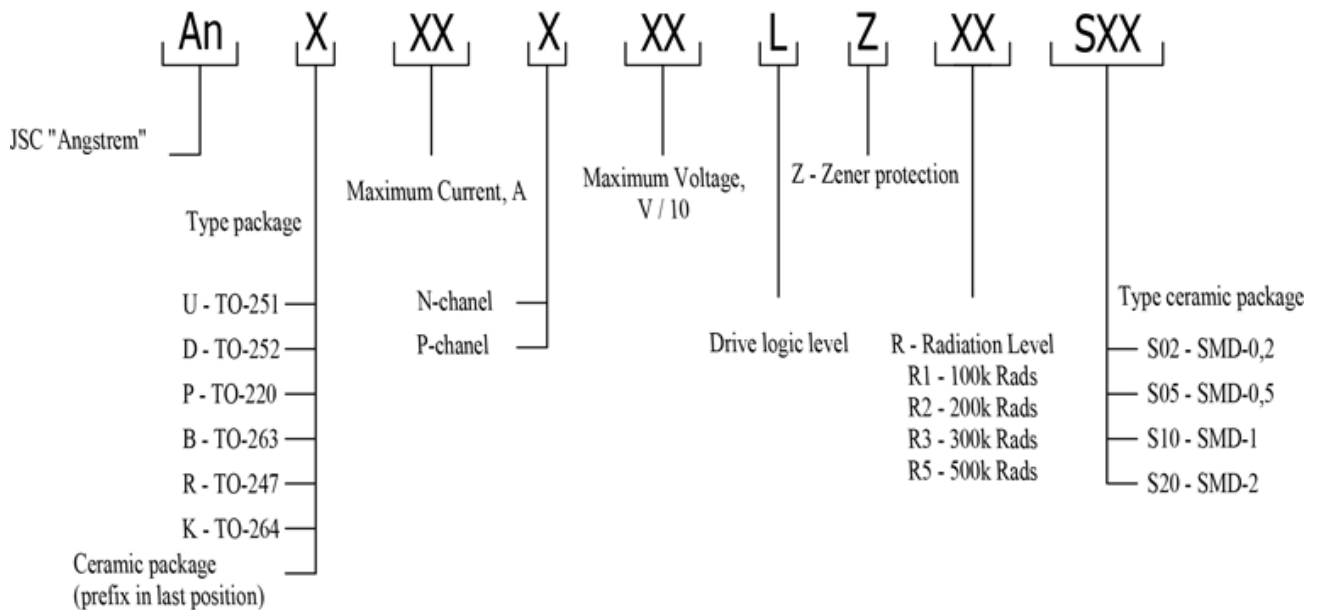
1 Dimensions are shown in millimeters.

PAD ASSIGNMENTS

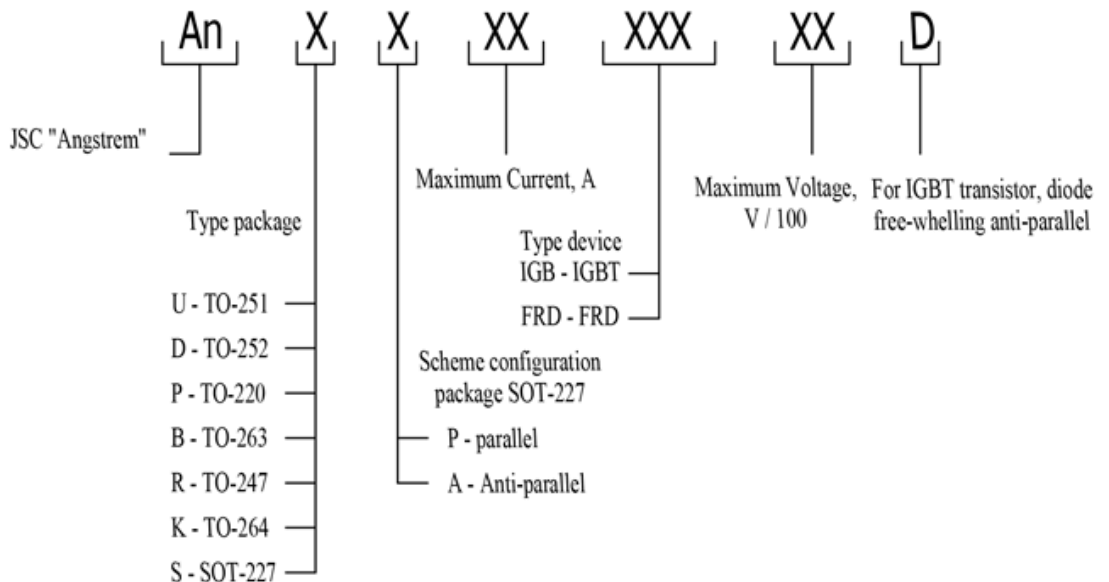
1 = GATE
2 = COLLECTOR
3 = EMITTER



Description name MOSFET



Description name IGBT & FRD



Sample:

- AnB7N60 - MOSFET N-channel, 7A, 600V, package TO-263
- An10N70R1S10 - MOSFET N-channel, 10A, 700V, Radiation level 100k Rads, package SMD-1
- AnR75IGB12 - IGBT, 75A, 1200V, package TO-247
- An50FRD17 - FRD, 50A, 1700V, chip
- AnSP100FRD04 - FRD, 200A, 400V package SOT-227 configuration two diode parallel