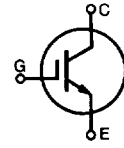
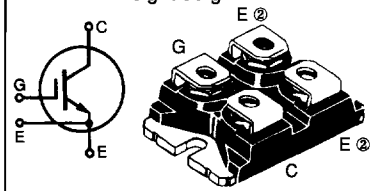
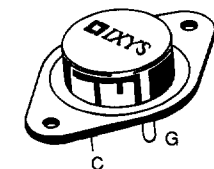
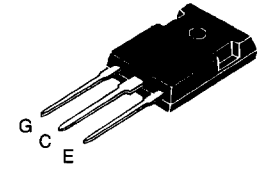


# Insulated Gate Bipolar Transistors (IGBT)

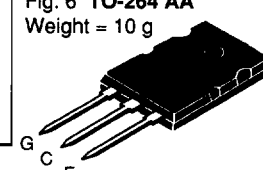
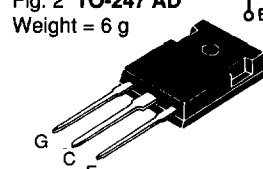


Type ①	V <sub>ces</sub> V	I <sub>c</sub> A	V <sub>ce(sat)</sub> V	I <sub>ce</sub> A	V <sub>ce</sub> V	I <sub>ce</sub> A	t <sub>ri</sub> typ. 25°C μs	t <sub>tr</sub> typ. 25°C μs	t <sub>off</sub> typ. 25°C μs	Notes
<b>low V</b>										
IXGH 10N60	600	20	10	2.5	750	30	0.35	1.25	100	Fig. 2 TO-247 AD Weight = 6 g
IXGH 20N60		40	20	2.5	1500	40	0.3	0.83	150	
IXGH 30N60		50	30	2.5	2800	70	0.4	0.62	200	
IXGH 31N60		40	31	1.8	1500	40	1.1*	0.83	150	
IXGH 38N60		60	38	1.8	2800	70	1.1*	0.62	200	
IXGH 40N60		75	40	2.5	4500	100	0.6	0.42	300	
IXGH 60N60		75	60	1.8	4500	90	0.55*	0.42	300	
<b>High speed</b>										
IXGH 10N100	1000	20	10	3.5	750	30	0.6	1.25	100	Fig. 3 a TO-204 AE Weight = 12 g
IXGH 17N100		34	17		1500	40	0.7	0.83	150	
IXGH 25N100		50	25		2750	50	0.75	0.62	200	
IXGH 10N60A	600	20	10	3.0	750	30	0.25	1.25	100	
IXGH 20N60A		40	20	3.0	1500	40	0.2	0.83	150	
IXGH 30N60A		50	30	2.7	1500	40	0.175*	0.83	150	
IXGH 31N60A		40	31	3.0	2800	70	0.3	0.62	200	
IXGH 38N60A		60	38	2.7	2800	70	0.175*	0.62	200	
IXGH 40N60A		75	40	3.0	4500	100	0.4	0.42	300	
IXGH 60N60A		75	60	2.7	4500	90	0.2*	0.42	300	
<b>low V</b>										
IXGM 20N60	600	40	20	2.5	1500	40	0.3	0.83	150	Fig. 7 SOT-227 B miniBLOC Weight 30 g
IXGM 30N60		50	30		2800	70	0.4	0.62	200	
IXGM 40N60		75	40		4500	100	0.6	0.42	300	
IXGM 17N100	1000	34	17	3.5	1500	40	0.7	0.83	150	
IXGM 25N100		50	25		2750	50	0.75	0.62	200	
IXGM 10N60B	600	20	10	3.0	750	30	0.2	1.25	100	
IXGM 20N60B		40	20	3.0	1500	40	0.2	0.83	150	
IXGM 30N60B		50	30		2800	70	0.4	0.62	200	
IXGM 40N60B		75	40		4500	100	0.6	0.42	300	
IXGM 10N100B	1000	20	10	4.0	1500	40	0.75	0.83	150	
IXGM 17N100B		34	17		2750	50	0.7	0.62	200	
IXGM 25N100B		50	25		2750	50	0.7	0.62	200	
IXGM 30N60C	600	50	30	2.5	9000	305	0.15*	0.20	625	Fig. 2 TO-247 AD Weight = 6 g
IXGH 10N60U1	600	20	10	2.5	750	30	0.35	1.25	100	



## IGBT with Diode, Combi Pack

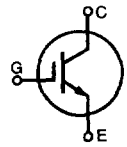
Type ①	V <sub>ces</sub> V	I <sub>c</sub> A	V <sub>ce(sat)</sub> V	I <sub>ce</sub> A	V <sub>ce</sub> V	I <sub>ce</sub> A	t <sub>ri</sub> typ. 25°C μs	t <sub>tr</sub> typ. 25°C μs	t <sub>off</sub> typ. 25°C μs	Notes
<b>low V</b>										
IXGH 10N60U1	600	20	10	2.5	750	30	0.35	1.25	100	Fig. 2 TO-247 AD Weight = 6 g
IXGH 20N60U1		40	20	2.5	1500	40	0.3	0.83	150	
IXGH 30N60U1		50	30	2.5	2800	70	0.4	0.62	200	
IXGH 31N60U1		40	31	1.8	1500	40	1.1*	0.83	150	
IXGH 38N60U1		60	38	1.8	2800	70	1.1*	0.62	200	
IXGH 10N100U1	1000	20	10	3.5	750	30	0.45	1.25	100	
IXGH 17N100U1		34	17		1500	40	0.7	0.83	150	
<b>High speed</b>										
IXGH 10N60U1A	600	20	10	3.0	750	30	0.25	1.25	100	Fig. 6 TO-264 AA Weight = 10 g
IXGH 20N60U1A		40	20	3.0	1500	40	0.2	0.83	150	
IXGH 30N60U1A		50	30	2.7	1500	40	0.175*	0.83	150	
IXGH 31N60U1A		40	31	3.0	2800	70	0.4	0.62	200	
IXGH 38N60U1A		60	38	2.7	2800	70	0.175*	0.62	200	
IXGH 10N100U1A	1000	20	10	4.0	750	30	0.45	1.25	100	
IXGH 17N100U1A		34	17		1500	40	0.75	0.83	150	
IXGH 25N100U1A		50	25		2750	50	0.75	0.62	200	
IXGH 30N60U1B	600	50	30	2.5	9000	305	0.15*	0.20	625	Fig. 2 TO-247 AD Weight = 6 g
IXGH 10N60U1	600	20	10	2.5	750	30	0.35	1.25	100	



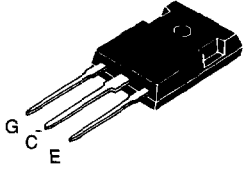
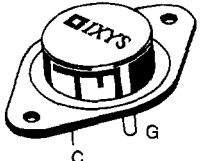
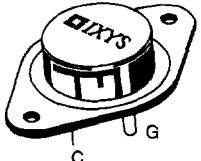
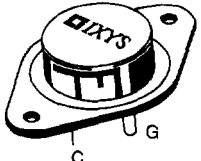
① T<sub>JM</sub> = 150°C for all types ② Either Terminal can be used as Kelvin or Main  
\* Maximum value

G = Gate, E = Emitter,  
C = Collector

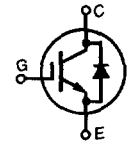
# Insulated Gate Bipolar Transistors (IGBT)



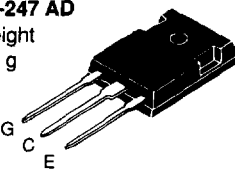
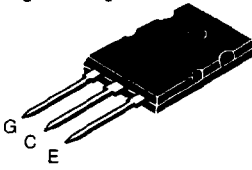
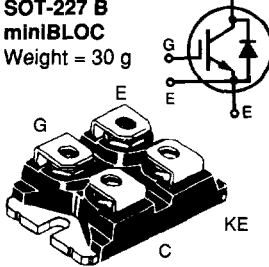
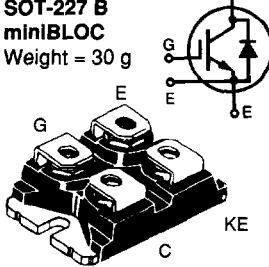
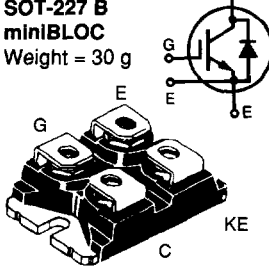
"S" series with improved SCSOA capability

Type	$V_{CE(sat)}$	$I_C$ $T_C = 25^\circ\text{C}$	$I_C$ $T_C = 50^\circ\text{C}$	$V_{CE(sat)}$ max.	$C_{int}$ typ.	$C_{ext}$ typ.	$t_{tr}$ typ. 25°C $\mu\text{s}$	$t_{sw}$	$t_{off}$	$\lambda$	Package style	
low V	IXSH 20N60	600	40	20	2.5	1800	45	0.4	10	0.83	150	Fig. 2 TO-247 AD Weight = 6 g 
	IXSH 30N60		50	30		2800	50	0.4		0.62	200	
	IXSH 40N60		75	40		4500	90	0.4		0.42	300	
	IXSH 25N100	1000	50	25	3.5	2800	50	0.4	10	0.62	200	
	IXSH 45N100		75	45	2.7	4150	60	1.5*		0.42	300	
	IXSH 45N120	1200	75	45	3.0	4275	70	1.2	10	0.42	300	
High speed	IXSH 20N60A	600	40	20	2.5	1800	45	0.2	10	0.83	150	Fig. 3a TO-204 AE Weight = 12 g 
	IXSH 30N60A		50	30		2800	50	0.5*		0.62	200	
	IXSH 40N60A		75	40		4500	90	0.2		0.42	300	
	IXSH 25N100A	1000	50	25	3.5	2800	50	0.4	10	0.62	200	
	IXSH 45N100A		75	45	2.7	4150	60	1.5*		0.42	300	
	IXSH 45N120A	1200	75	45	3.0	4275	70	0.95	10	0.42	300	
low V	IXSM 20N60	600	40	20	2.5	1800	45	0.4	10	0.83	150	Fig. 3a TO-204 AE Weight = 12 g 
	IXSM 30N60		50	30		2800	50	0.4		0.62	200	
	IXSM 40N60		75	40		4500	90	0.4		0.42	300	
	IXSM 25N100	1000	50	25	3.5	2800	50	0.4	10	0.62	200	
	IXSM 45N100		75	45	2.7	4150	60	1.5*		0.42	300	
	IXSM 45N120	1200	75	45	3.0	4275	70	0.6	10	0.42	300	
High speed	IXSM 20N60A	600	40	20	2.5	1800	45	0.2	10	0.83	150	Fig. 3a TO-204 AE Weight = 12 g 
	IXSM 30N60A		50	30		2800	50	0.2		0.62	200	
	IXSM 40N60A		75	40		4500	90	0.2		0.42	300	
	IXSM 25N100A	1000	50	25	3.5	2800	50	0.4	10	0.62	200	
	IXSM 45N100A		75	45	2.7	4150	60	1.5*		0.42	300	
	IXSM 45N120A	1200	75	45	3.0	4275	70	0.95*	10	0.42	300	

## IGBT with Diode, Combi Pack



"S" series with improved SCSOA-capability

Type	$V_{CE(sat)}$	$I_C$ $T_C = 25^\circ\text{C}$	$I_C$ $T_C = 50^\circ\text{C}$	$V_{CE(sat)}$ max.	$C_{int}$ typ.	$C_{ext}$ typ.	$t_{tr}$ typ. 25°C $\mu\text{s}$	$t_{sw}$	$t_{off}$	$\lambda$	Package style	
low V	IXSH 20N60U1	600	40	20	2.5	1800	45	0.4	10	0.83	150	Fig. 2 TO-247 AD Weight = 6 g 
	IXSH 30N60U1		50	30		2800	50	0.4	10	0.62	200	
High speed	IXSH 20N60AU1	600	40	20	2.5	1800	45	0.2	10	0.83	150	Fig. 6 TO-264 AA Weight = 10 g 
	IXSH 24N60AU1		48	24	2.7	2500	35	0.5*		0.62	150	
	IXSH 40N60AU1		60	30	2.3	3500	50	0.2		0.42	200	
low V	IXSN 50N60U1	600	75	50	2.7	4300	90	0.6*	10	0.42	300	Fig. 7 SOT-227 B miniBLOC Weight = 30 g 
High speed	IXSN 62N60U1 <sup>②</sup>		100	50				0.4		0.50	250	
low V	IXSN 35N100U1	1000	38	25	3.5	4500	90	2.0	10	0.61	205	Fig. 7 SOT-227 B miniBLOC Weight = 30 g 
	IXSN 55N100U1 <sup>③</sup>		61	41		9000	180			0.38	330	
High speed	IXSH 20N60AU1	600	40	20	2.5	1800	45	0.34	10	0.61	205	Fig. 7 SOT-227 B miniBLOC Weight = 30 g 
	IXSH 30N60AU1		50	30		2800	50	0.2		0.51	150	
								1.0				

①  $T_{JM} = 150^\circ\text{C}$  for all types, ② Either Emitter terminal can be used as Kelvin or Main, ③ In development  
Data at 25°C unless otherwise specified, \* Maximum value

G = Gate, E = Emitter, C = Collector, KE = Kelvin Emitter