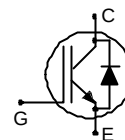


- Designed for:
 - SMPS
 - Lamp Ballast
 - ZVS-Converter
- 2nd generation HighSpeed-Technology for 1200V applications offers:
 - tight parameter distribution
 - temperature stable behaviour
 - parallel switching capability
 - loss reduction in resonant circuits
- Integrated fast free-wheeling diode



Formerly Development type IKx03F120

Type	V_{CE}	I_C	$V_{CE(sat)}$	T_j	Package	Ordering Code
IKW03N120H2	1200V	3A		150°C	TO-247	
IKP03N120H2					TO-220	
IKB03N120H2					TO-263	

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CE}	1200	V
DC collector current	I_C	3	A
$T_C = 100^\circ\text{C}$			
Pulsed collector current, t_p limited by T_{jmax}	I_{Cpuls}	9	
Turn off safe operating area $V_{CE} \leq 1200\text{V}$, $T_j \leq 150^\circ\text{C}$	-	9	
Gate-emitter voltage	V_{GE}	± 20	V
Operating junction and storage temperature	T_j , T_{stg}	-40...+150	°C
Soldering temperature, 1.6mm (0.063 in.) from case for 10s	-	260 225 (for SMD)	

Electrical Characteristic, at $T_j = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			min.	Typ.	max.	
Static Characteristic						
Collector-emitter breakdown voltage	$V_{(BR)CES}$	$V_{GE}=0V, I_C=300\mu A$	1200	-	-	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$V_{GE} = 15V, I_C=3A$	-		-	
		$T_j=25^{\circ}C$	-	2.2	-	
		$T_j=150^{\circ}C$	-	2.55	-	
Diode forward voltage	V_F	$V_{GE} = 0V, I_C=2A$				
		$T_j=25^{\circ}C$		2.0		
		$T_j=150^{\circ}C$		1.75		
Gate-emitter threshold voltage	$V_{GE(th)}$	$I_C=90\mu A, V_{CE}=V_{GE}$	2.1	3	3.9	
Zero gate voltage collector current	I_{CES}	$V_{CE}=1200V,$ $V_{GE}=0V$				μA
		$T_j=25^{\circ}C$	-	-	50	
		$T_j=150^{\circ}C$	-	-	100	
Gate emitter leakage current	I_{GES}	$V_{CE}=1200V, V_{GE}=0V$	-	-	100	nA

Switching Characteristic, Inductive Load, at $T_j=25^\circ\text{C}$

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	Max.	
IGBT Characteristic						
Turn-off delay time	$t_{d(off)}$	$V_{CC}= 800V, I_C=3A,$ $V_{GE}=15/0V,$ $R_G=100\Omega$	-	350.	-	ns
Fall time	t_f		-	50.	-	
Turn-off energy	E_{off}			-	0.150	-
Turn-off energy	E_{off}	$V_{CC}= 1000V, I_C=3A,$ $V_{GE}=0/15V,$ $R_G=100\Omega,$ $dU/dt = 700V/\mu s^1$	-	0.030	-	mJ

Switching Characteristic, Inductive Load, at $T_j=150^\circ\text{C}$

Parameter	Symbol	Conditions	Value			Unit
			Min.	typ.	max.	
IGBT Characteristic						
Turn-off delay time	$t_{d(off)}$	$V_{CC}=800V, I_C=3A,$ $V_{GE}=0/15V,$ $R_G=100\Omega$	-	450	-	ns
Fall time	t_f		-	50	-	
Turn-off energy	E_{off}			-	0.28	-

¹ dU/dt determined by external capacitance



Target

1200V IGBT
IKW03N120H2
IKB03N120H2
IKP03N120H2

Turn-off energy	E_{off}	$V_{CC}=1000V, I_C=3A,$ $V_{GE}=0/15V,$ $R_G=100\Omega, dU/dt =$ $700V/\mu s^{-1}$	-	0.045	-	mJ
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