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FGA20S140P — 1400 V、 20 A 阳极短路 IGBT

2014年2月



FGA20S140P 1400 V、 20 A、短路阳极 IGBT

特性

- 高速开关
- 低饱和电压: V_{CE(sat)}=1.9 V @ I_C=20 A
- 高输入阻抗
- 符合 RoHS 标准

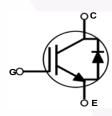
应用

• 感应加热、微波炉

概述

飞兆半导体的短路阳极沟道 IGBT 系列采用先进的场截止沟道和 短路阳极技术,为软开关应用提供卓越的导通和开关性能。该器 件可并联配置,具有极佳的雪崩能力。该器件为感应加热和微波 炉而设计。





绝对最大额定值Tc=25°C 除非另有说明

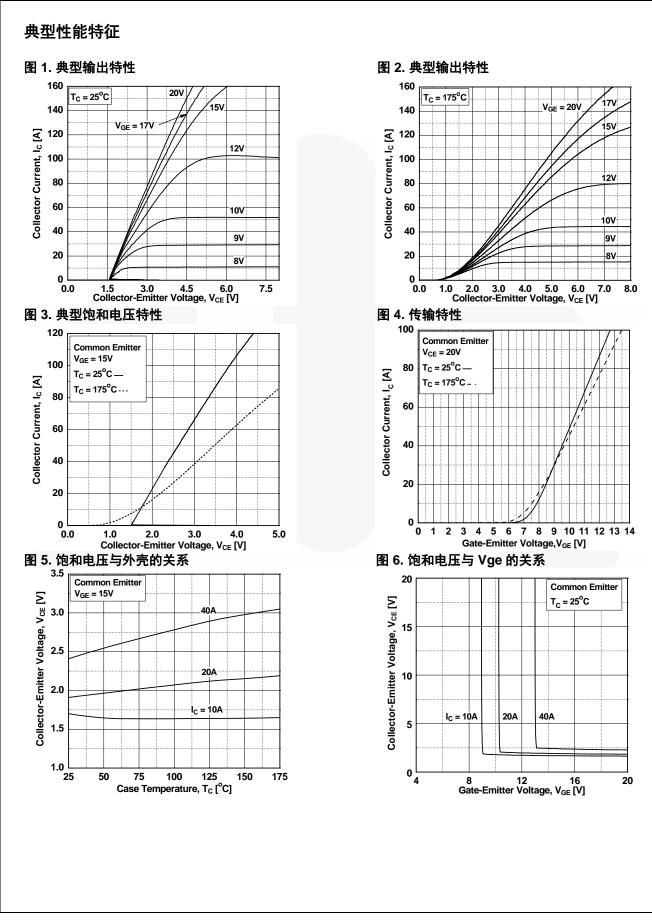
符号	说明		额定值	单位
V _{CES}	集电极 - 发射极之间电压		1400	V
V _{GES}	栅极一发射极间电压		±25	V
I _C	集电极电流	@ T _C =25°C	40	A
	集电极电流	@ T _C =100°C	20	A
I _{CM (1)}	集电极脉冲电流		60	A
I _F	二极管正向连续电流	@ T _C =25°C	40	A
I _F	二极管正向连续电流	@ T _C =100°C	20	A
P _D	最大功耗	@ T _C =25°C	272	W
	最大功耗	@ T _C =100°C	136	W
TJ	工作结温		-55 至 +175	°C
T _{stg}	存储温度范围		-55 至 +175	°C
TL	用于焊接的最大引脚温度,距离外壳 1/8",持续 5 秒		300	°C

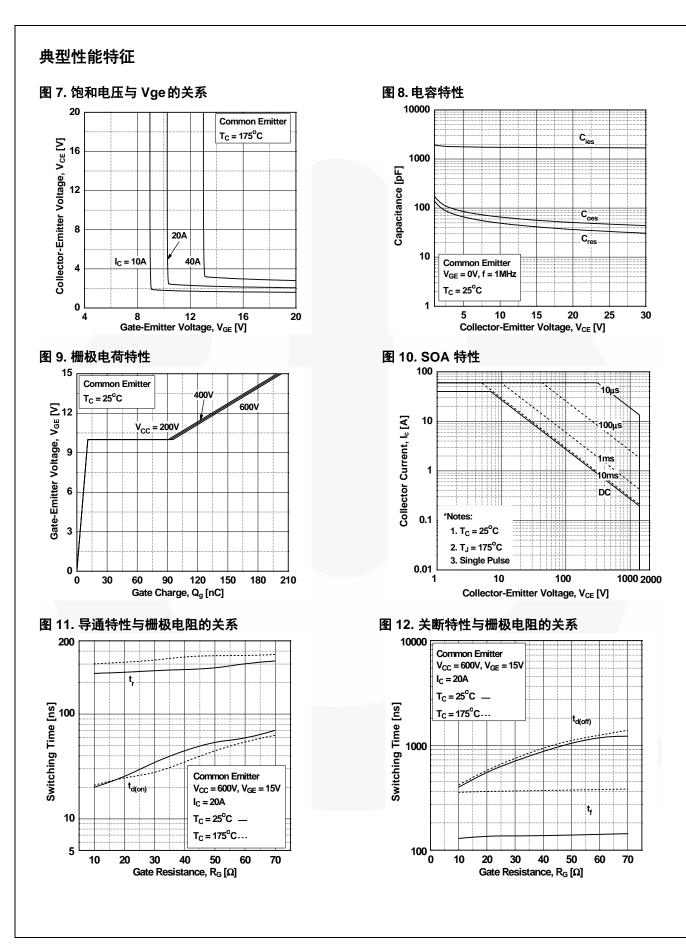
热性能

符号	参数	典型值	最大值	单位
$R_{\theta JC}(IGBT)$	结点 - 壳体的热阻		0.55	°C/W
$R_{ extsf{ heta}JA}$	结至环境热阻		40	°C/W

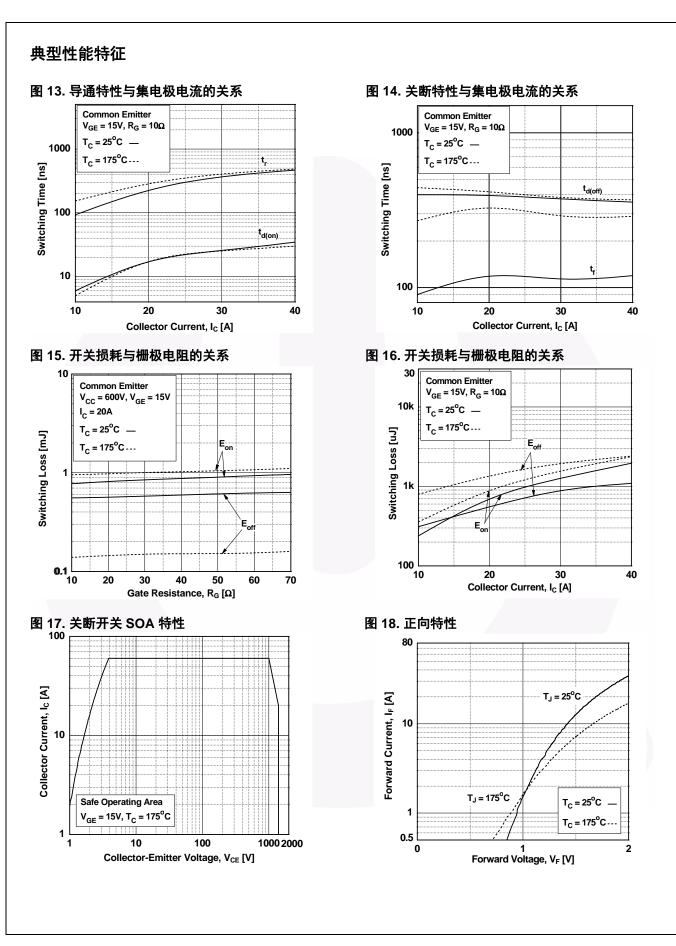
注意: 1: 受限于 Tjmax

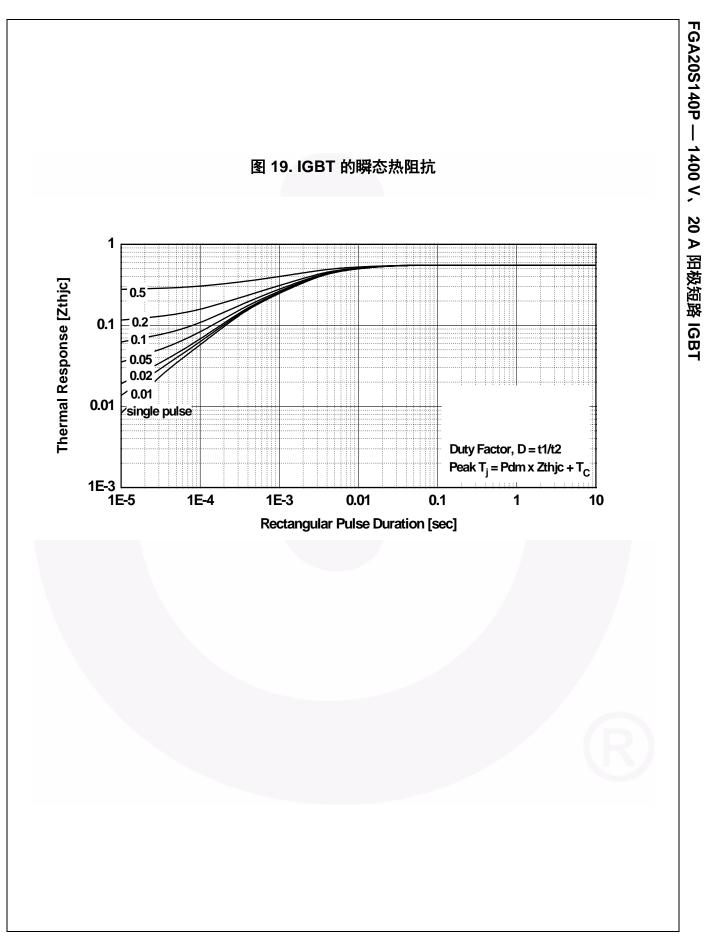
器件标识 FGA20S140P		器件	器件 封装 卷尺寸		带宽		数量	
		FGA20S140P	TO-3PN			-		30
GBT 的	电气特	性 T _C =25℃ 除非另有说明			·			
符号		参数	测	试条件	最小值	典型值	最大值	单位
关断特性								
I _{CES}	集电极切	断电流	V _{CE} =1400,	V _{GE} =0 V	-	-	1	mA
I _{GES}	G-E 漏电流		V _{GE} =V _{GES} ,	V _{CE} =0 V	-	-	±500	nA
导通特性						1		
V _{GE(th)}	G-E 阈值	电压	I _C =20 mA,	V _{CE} =V _{GE}	4.5	6.0	7.5	V
			I _C =20 A, T _C =25°C	I _C =20 A, V _{GE} =15 V T _C =25°C		1.9	2.4	V
V _{CE(sat)} 集电极 - 发		发射极间饱和电压			-	2.1	-	V
			I _C =20 A, ∨ T _C =175°C	I _C =20 A, V _{GE} =15 V, T _C =175°C		2.2	-	V
V _{FM}	二极管正	向由压	I _F =20 A, T	_C =25°C	-	1.7	2.4	V
		小巴还	I _F =20 A, T	_C =175°C	-	2.1	-	V
动态特性							II	
Cies	输入电容			V _{CE} = 30 V, V _{GE} =0 V,	-	1686	-	pF
C _{oes}	输出电容				-	45	-	pF
C _{res}	反向传输	电容	f=1 MHz		-	32	-	pF
	导通延迟	は回			-	20		ns
t _{d(on)} t _r	上升时间	-1101	V _{CC} =600 V, I _C =20 A,		-	245	-	ns
t _{d(off)}	关断延迟	时间			_	400	-	ns
t _f	下降时间		R _G =10 Ω,	V _{GE} =15 V,	-	130	-	ns
E _{on}	导通开关	损耗	<u> </u>	T _C =25°C	-	0.76	-	mJ
E _{off}	关断开关				-	0.56	-	mJ
E _{ts}	总开关损款				-	1.32	-	mJ
t _{d(on)}	导通延迟	时间			-	21	-	ns
t _r	上升时间				-	301	-	ns
t _{d(off)}	关断延迟	时间	V _{CC} =600 V, I _C =20 A, R _G =10 Ω, V _{GE} =15 V, 阻性负载,T _C =175°C		-	420	-	ns
t _f	下降时间				-	356	- /	ns
Eon	导通开关	损耗	阻性负载,	1 _C =175°C	-	0.95	-	mJ
E _{off}	关断开关	损耗			-	1.39	-	mJ
E _{ts}	总开关损罪	耗			-	2.34	-	mJ
Qg	总栅极电	荷			-	203.5	-	nC
Q _{ge}	栅极一发	射极间电荷	V _{CE} =600 V, V _{GE} =15 V	I _C =20 A,	-	10.8	-	nC
Q _{gc}	栅极一发	射极间电荷	VGE=15 V		-	84.6	-	nC

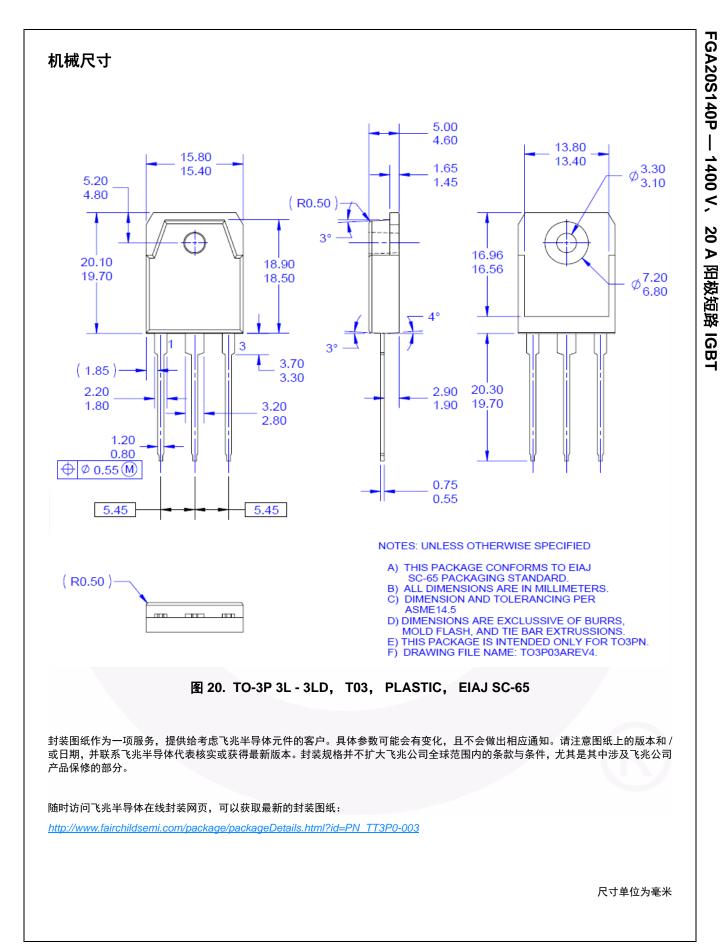




FGA20S140P — 1400 V、 20 A 阳极短路 IGBT









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GA20S140P — 1400 V,

20 A 阳极短路 IGBT

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