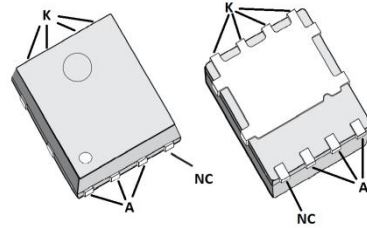


ESTF30SS20SI

Ultrafast recovery diode

Features

- Ultrafast Recovery Time
- Suited for DC/DC converts
- Low losses
- High T_J
- High surge current capability
- High energy avalanche capability



Applications

- high frequency DC to DC converters
- low voltage high frequency inverters



Absolute Maximum Ratings @ $T_c=25^\circ\text{C}$

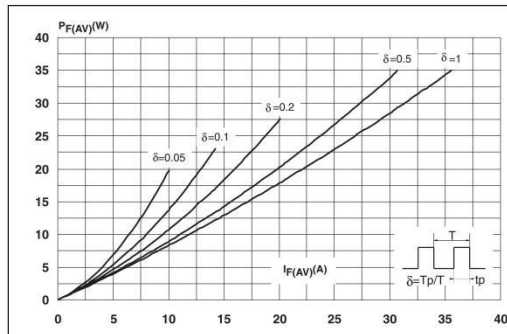
Symbol	Parameter	ratings	Unit
V_{RRM}	Repetitive peak reverse voltage	200	V
V_{RWM}	Working Peak Reverse Voltage	200	V
$I_{F(AV)}$	Average forward current @ $T_c=105^\circ\text{C}$	30	A
I_{FSM}	Peak one Cycle Surge Forward @ $t=8.3\text{ms}$	45	A
T_J	Junction Temperature	175	$^\circ\text{C}$
T_{STG}	Storage temperature range	-65~+175	$^\circ\text{C}$

Electrical Specifications @ $T_c=25^\circ\text{C}$

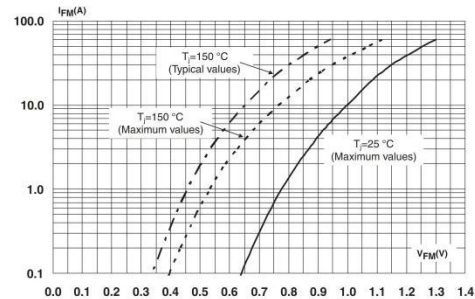
Symbol	Parameter		Ratings			Unit
			Min	Typ	Max	
I_R	$T_J=25^\circ\text{C}$	$V_R=V_{RRM}$			10	nA
V_F	$T_J=25^\circ\text{C}$	$I_F=30\text{A}$		0.9	1.15	V
T_{rr}	$I_F=1\text{A}$, $V_R=30\text{V}$, $di_F/dt=-200\text{A}/\mu\text{s}$			25	35	ns
Q_{rr}	$I_F=30\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $V_{CC}=160\text{V}$			120		nC
I_{RRM}				6.0	8.0	A
$R_{th(j-c)}$	Thermal resistance from junction to case	DFN 5x6			2.0	$^\circ\text{C}/\text{W}$

Typical Performance Curves

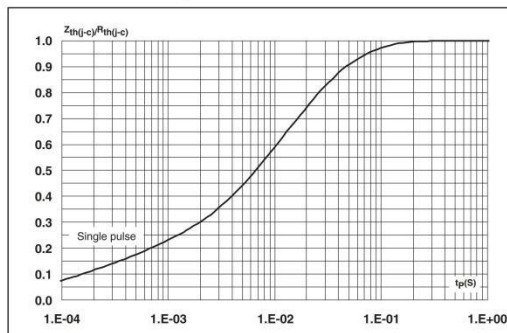
Average forward power dissipation
versus average forward current



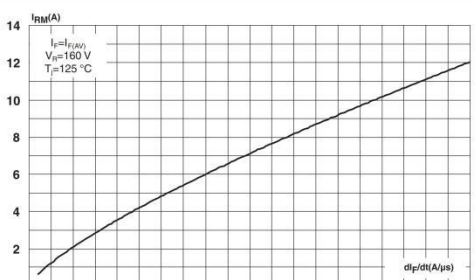
Forward voltage drop versus
forward current



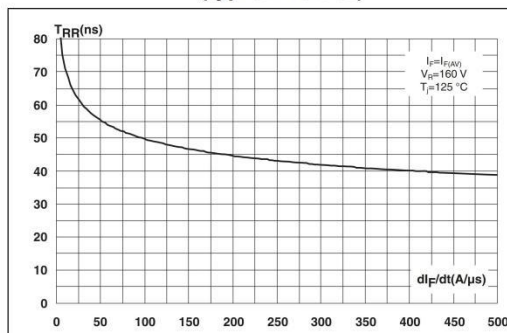
Relative variation of thermal
impedance junction to case versus
pulse duration



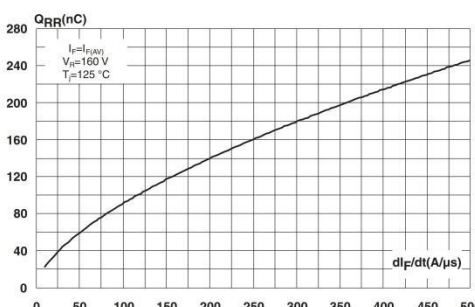
Peak reverse recovery current
versus di_F/dt (typical values)



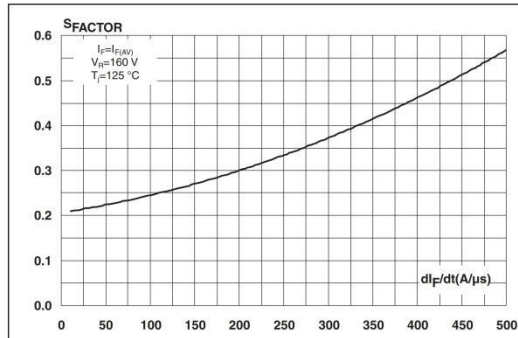
Reverse recovery time versus di_F/dt
(typical values)



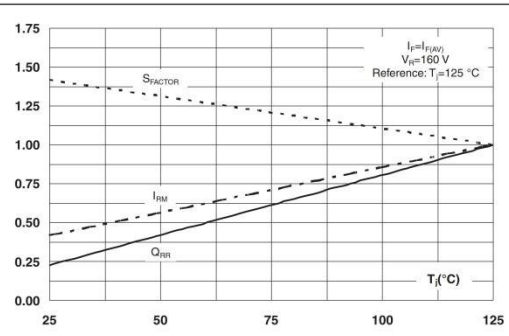
Reverse recovery charges versus
 di_F/dt (typical values)



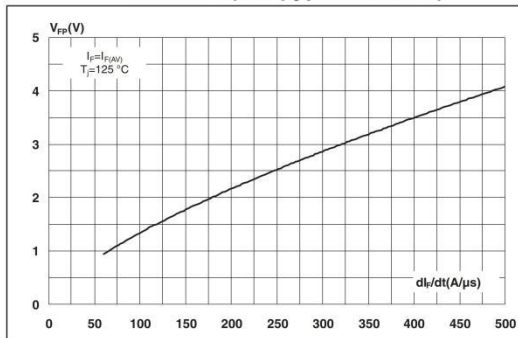
**Softness factor versus di_F/dt
(typical values)**



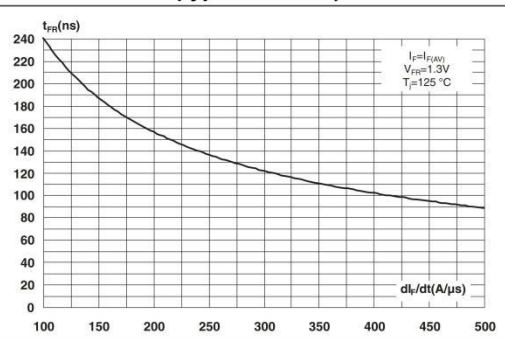
**Relative variations of dynamic
parameters versus junction temperature**



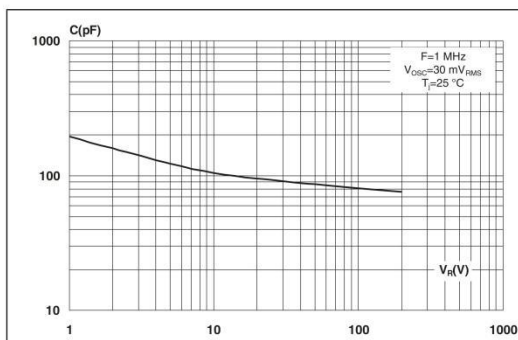
**Transient peak forward voltage
versus di_F/dt (typical values)**



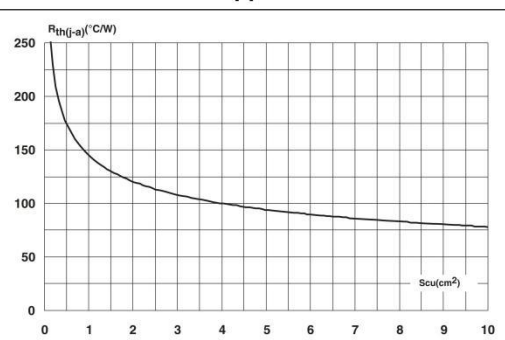
**Forward recovery time versus di_F/dt
(typical values)**



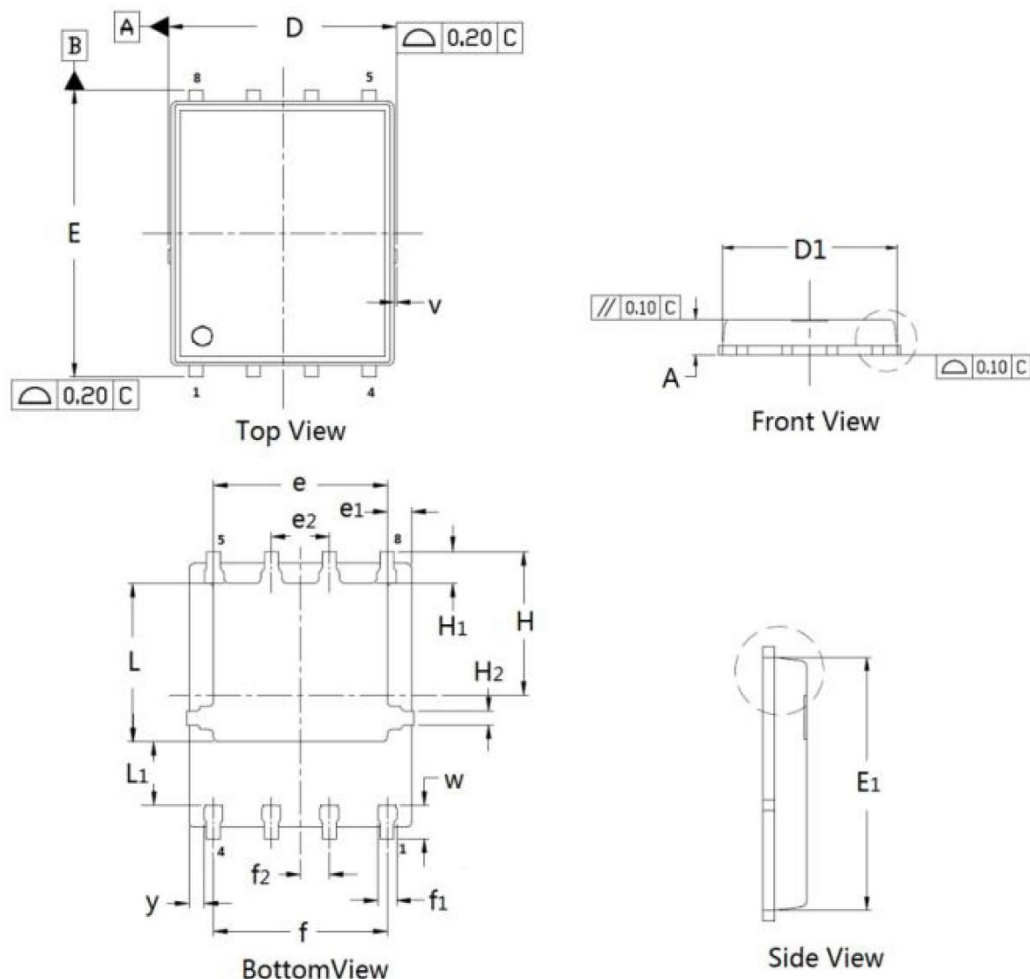
**Junction capacitance versus
reverse voltage applied (typical values)**



**Thermal resistance junction to
ambient versus copper surface under tab**



Package



DFN 5x6

DIMENSIONS (unit : mm)

Symbol	Min	Typ	Max	Symbol	Min	Typ	Max
A	0.90	1.02	1.10	D	4.90	4.98	5.10
D1	4.80	4.89	5.00	E	6.00	6.11	6.20
E1	5.65	5.74	5.85	e	3.72	3.80	3.92
e1	--	0.54	--	e2	--	1.27	--
f	--	3.82	--	f1	0.31	0.37	0.51
f2	--	0.64	--	H	--	3.15	--
H1	0.59	0.63	0.79	H2	0.26	0.28	0.32
L	3.38	3.45	3.58	L1	--	1.39	--
v	--	0.13	--	w	0.64	0.68	0.84
y	--	0.34	--		--		--