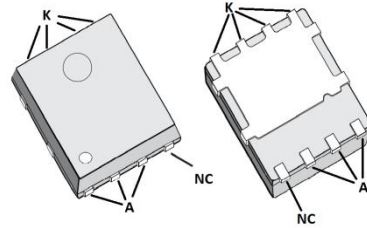


ESTF30SS20SI

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

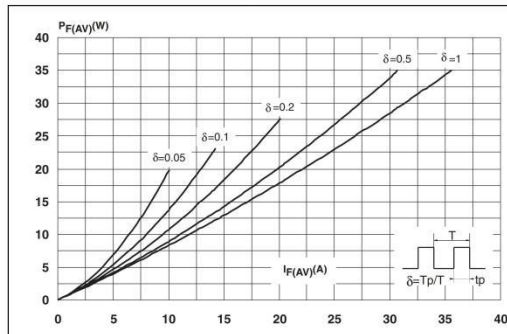
Symbol	Parameter	ratings	Unit
V_{RRM}	Repetitive peak reverse voltage	200	V
V_{RWM}	Working Peak Reverse Voltage	200	V
$I_{F(AV)}$	Average forward current @ $T_c=105^\circ\text{C}$	30	A
I_{FSM}	Peak one Cycle Surge Forward @ $t=8.3\text{ms}$	45	A
T_J	Junction Temperature	175	$^\circ\text{C}$
T_{STG}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

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

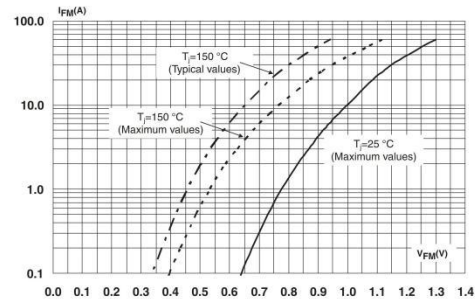
Symbol	Parameter		Ratings			Unit
			Min	Typ	Max	
I_R	$T_J=25^\circ\text{C}$	$V_R=V_{RRM}$			10	nA
V_F	$T_J=25^\circ\text{C}$	$I_F=30\text{A}$		0.9	1.15	V
T_{rr}	$I_F=1\text{A}$, $V_R=30\text{V}$, $di_F/dt=-200\text{A}/\mu\text{s}$			25	35	ns
Q_{rr}	$I_F=30\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $V_{CC}=160\text{V}$			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

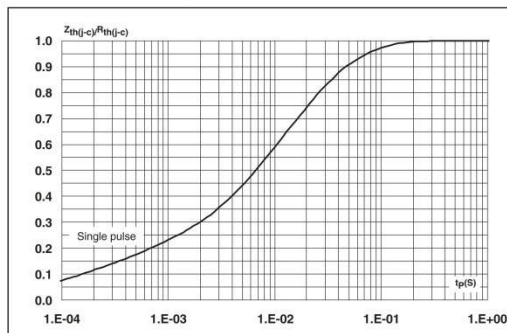
Average forward power dissipation versus average forward current



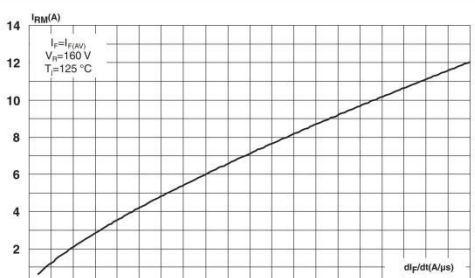
Forward voltage drop versus forward current



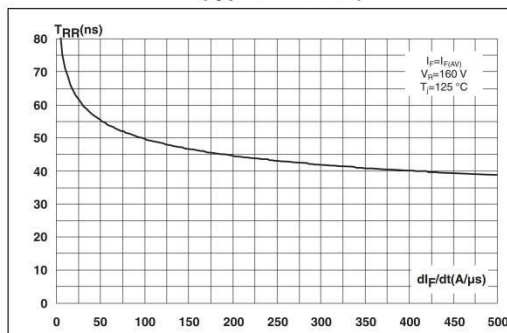
Relative variation of thermal impedance junction to case versus pulse duration



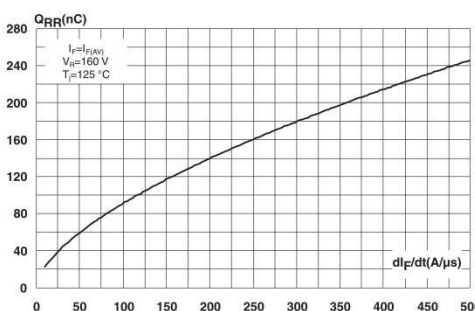
Peak reverse recovery current versus di_F/dt (typical values)



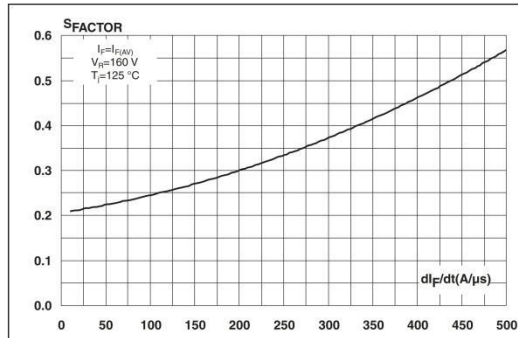
Reverse recovery time versus di_F/dt (typical values)



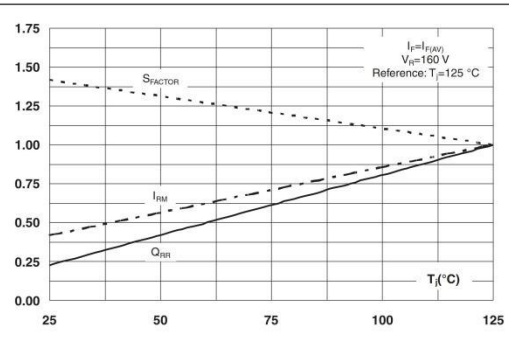
Reverse recovery charges versus di_F/dt (typical values)



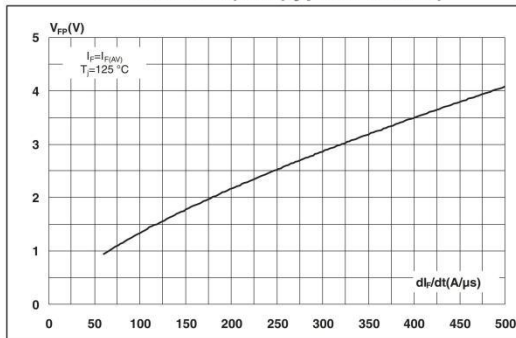
**Softness factor versus di_F/dt
(typical values)**



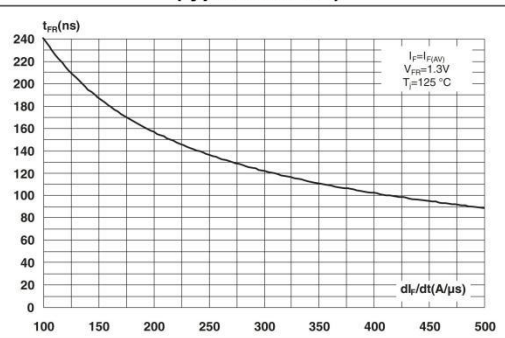
Relative variations of dynamic parameters versus junction temperature



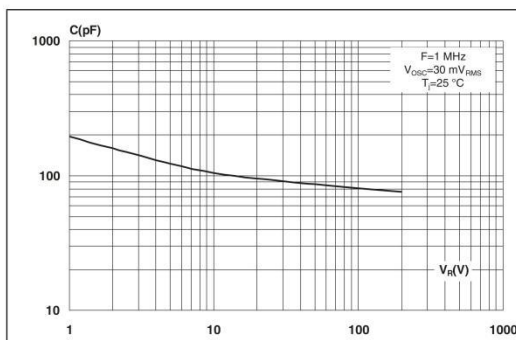
**Transient peak forward voltage versus di_F/dt
(typical values)**



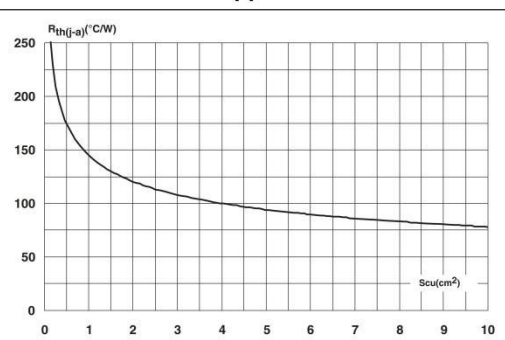
**Forward recovery time versus di_F/dt
(typical values)**



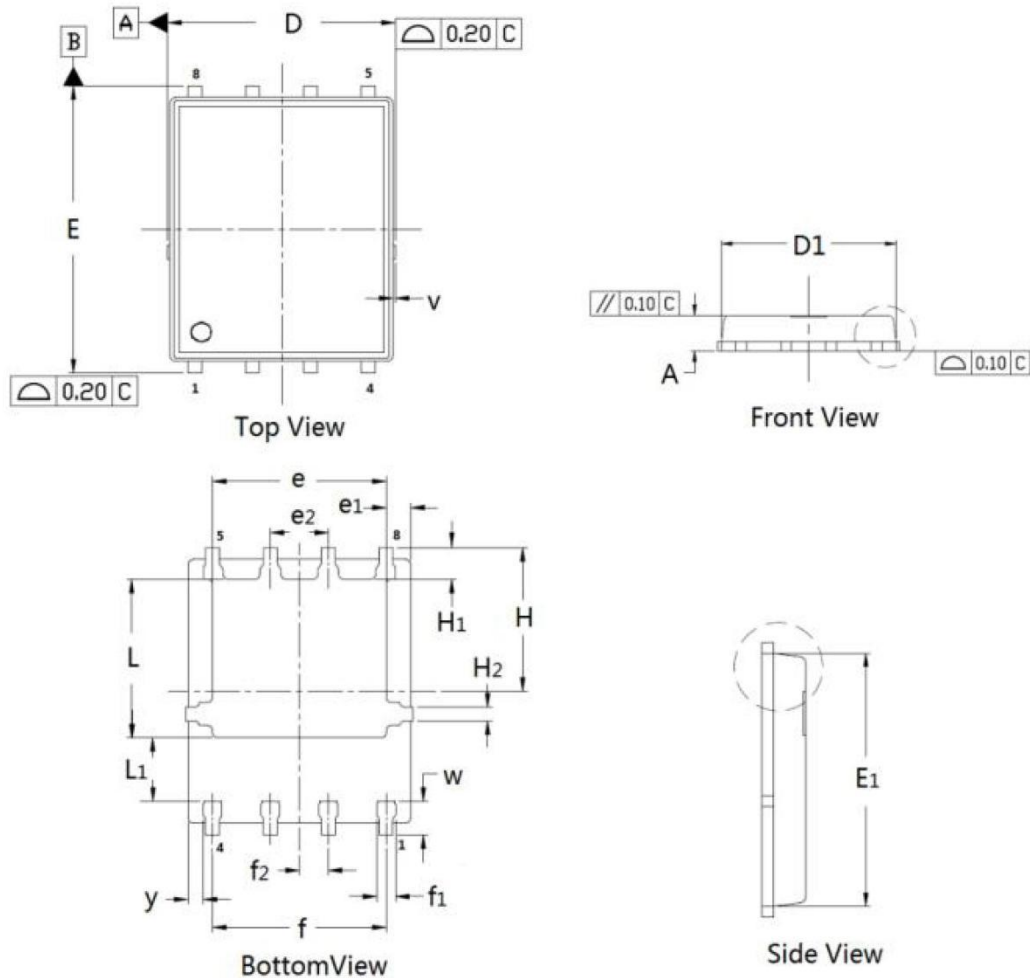
**Junction capacitance versus reverse voltage applied
(typical values)**



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	--		--		--