
2SK3080

Silicon N Channel MOS FET
High Speed Power Switching

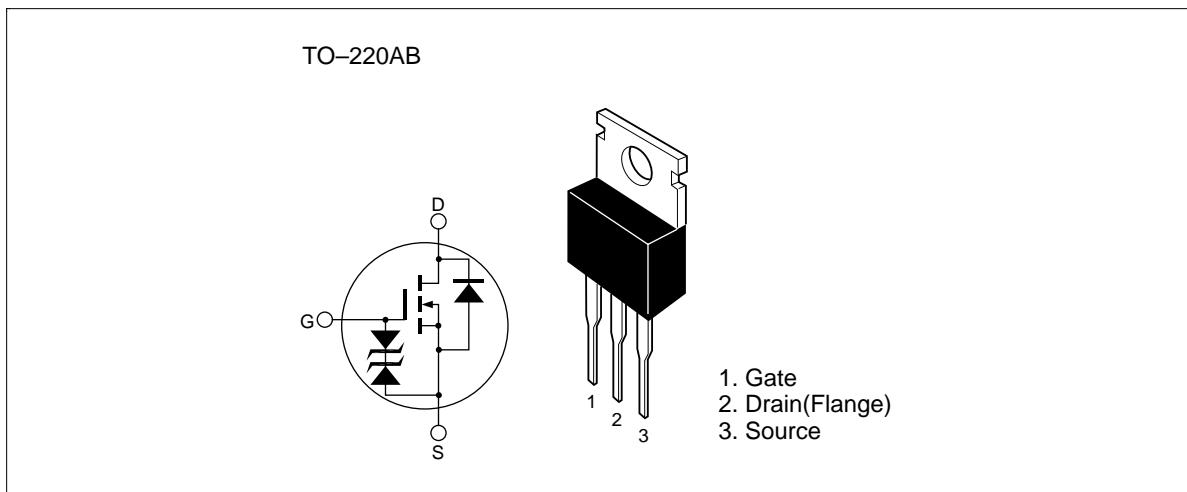
HITACHI

ADE-208-635A (Z)
2nd. Edition
May 1998

Features

- Low on-resistance
 $R_{DS(on)} = 20 \text{ m}\Omega$ typ. ($V_{GS} = 10\text{V}$, $I_D = 15 \text{ A}$)
- 4V gate drive devices.
- High speed switching

Outline



2SK3080

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	30	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	30	A
Drain peak current	$I_{D(pulse)}$ ^{Note1}	120	A
Body-drain diode reverse drain current	I_{DR}	30	A
Channel dissipation	P_{ch} ^{Note2}	50	W
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

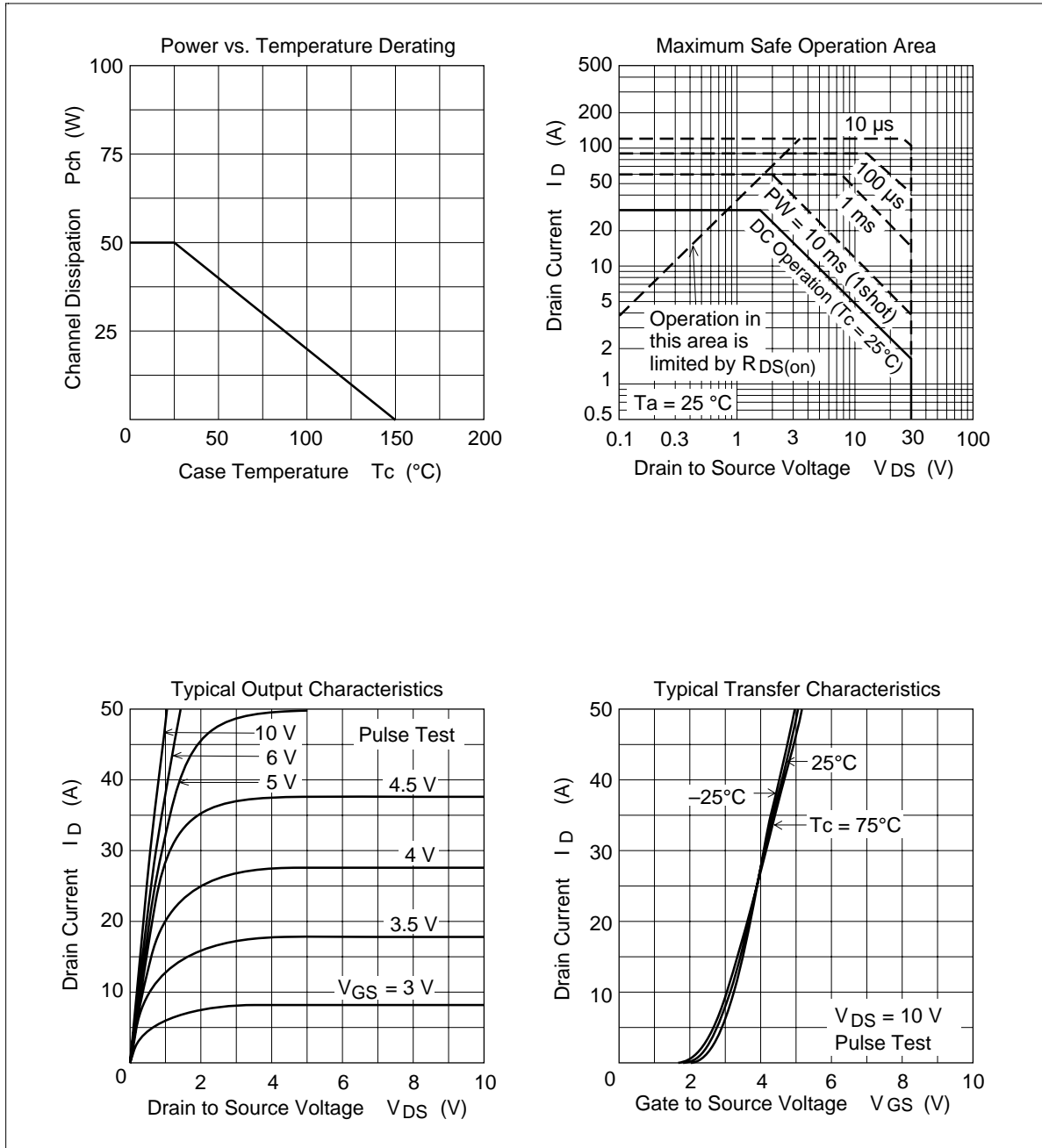
Note: 1. $PW \leq 10\mu s$, duty cycle $\leq 1\%$
 2. Value at $T_c = 25^\circ C$

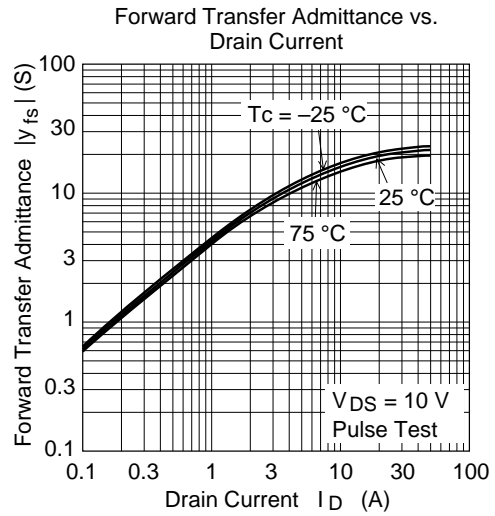
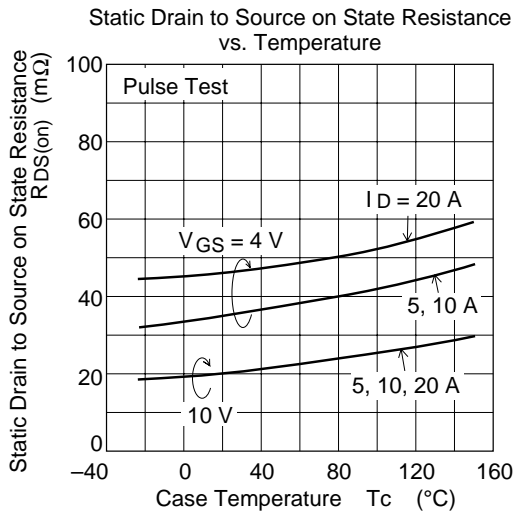
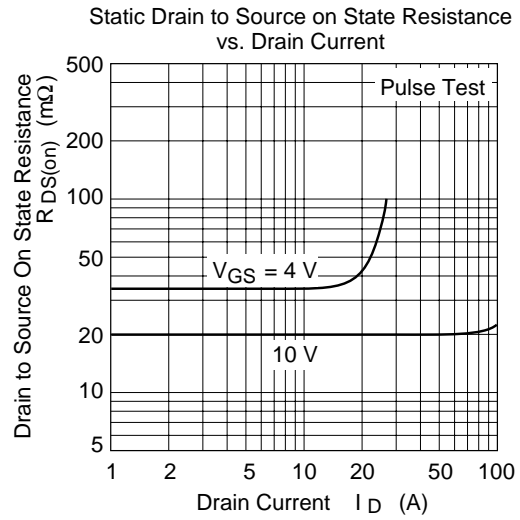
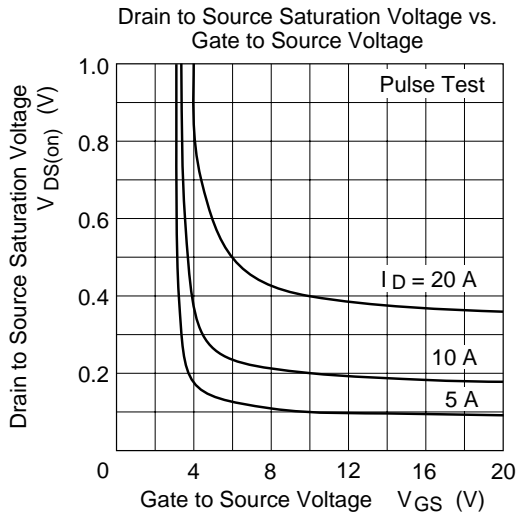
Electrical Characteristics (Ta = 25°C)

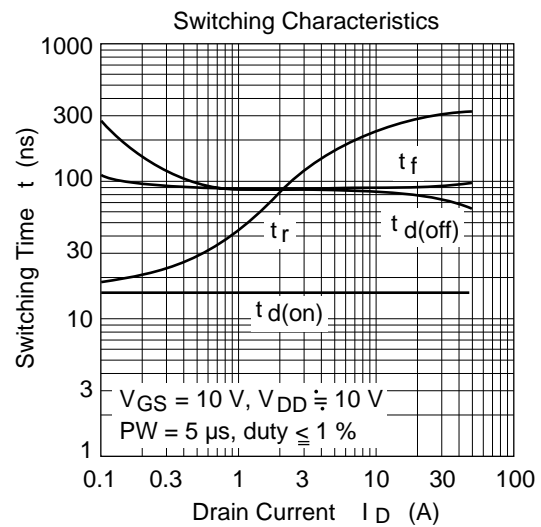
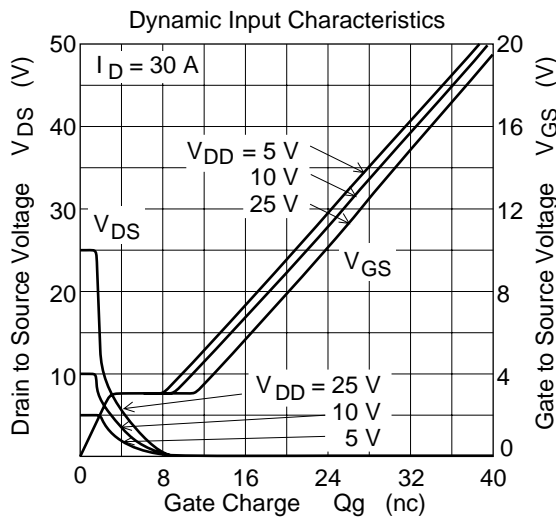
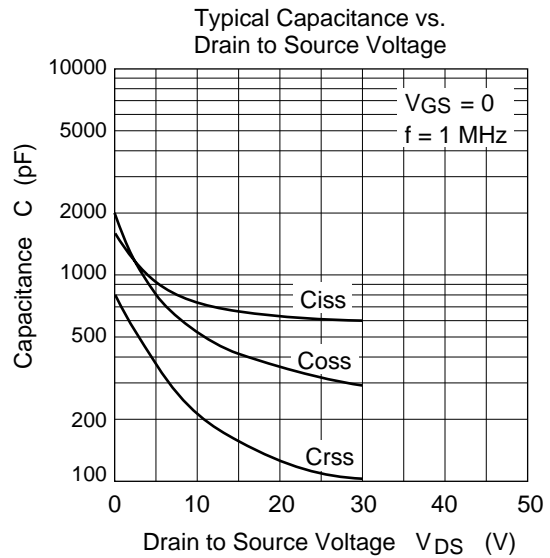
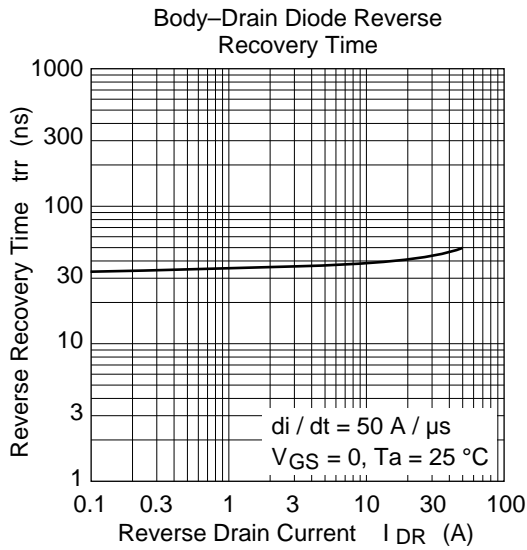
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	$I_D = 10mA, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100\mu A, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	10	μA	$V_{DS} = 30V, V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 16V, V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.0	V	$I_D = 1mA, V_{DS} = 10V$
Static drain to source on state resistance	$R_{DS(on)}$	—	20	28	mΩ	$I_D = 15A, V_{GS} = 10V$ ^{Note3}
Static drain to source on state resistance	$R_{DS(on)}$	—	35	50	mΩ	$I_D = 15A, V_{GS} = 4V$ ^{Note3}
Forward transfer admittance	$ y_{fs} $	12	18	—	S	$I_D = 15A, V_{DS} = 10V$ ^{Note3}
Input capacitance	C_{iss}	—	750	—	pF	$V_{DS} = 10V$
Output capacitance	C_{oss}	—	520	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	210	—	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}$	—	16	—	ns	$V_{GS} = 10V, I_D = 15A$
Rise time	t_r	—	260	—	ns	$R_L = 0.67\Omega$
Turn-off delay time	$t_{d(off)}$	—	85	—	ns	
Fall time	t_f	—	90	—	ns	
Body-drain diode forward voltage	V_{DF}	—	1.0	—	V	$I_F = 30A, V_{GS} = 0$
Body-drain diode reverse recovery time	t_{rr}	—	45	—	ns	$I_F = 30A, V_{GS} = 0$ $diF/dt = 50A/\mu s$

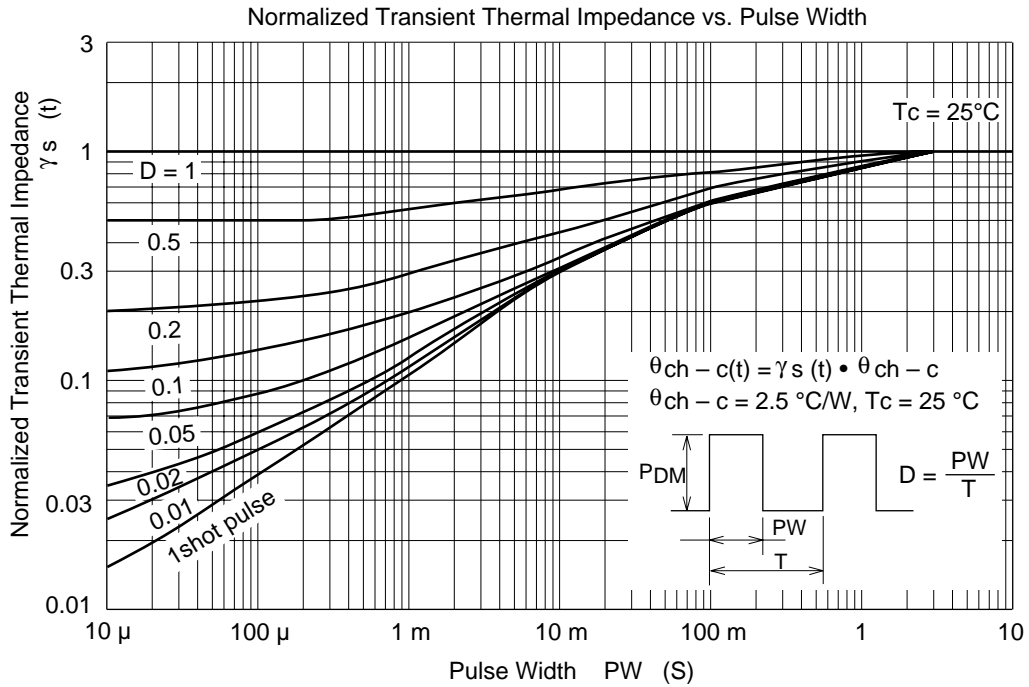
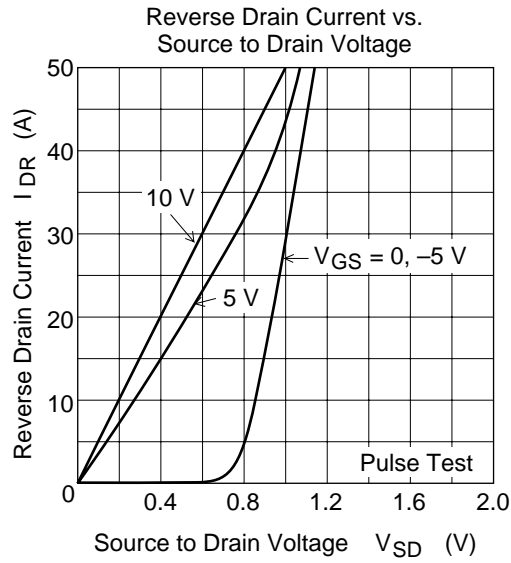
Note: 3. Pulse test

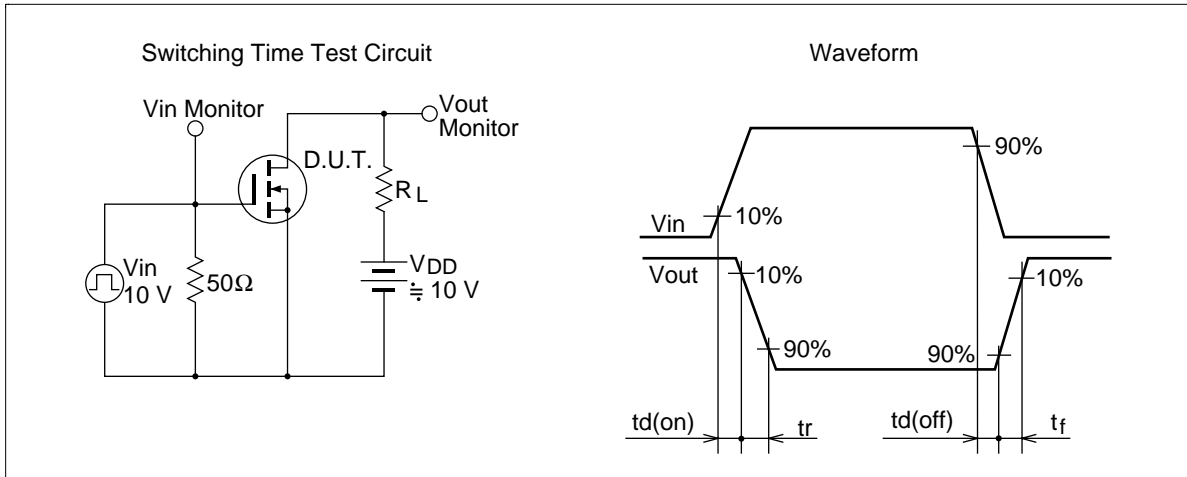
Main Characteristics







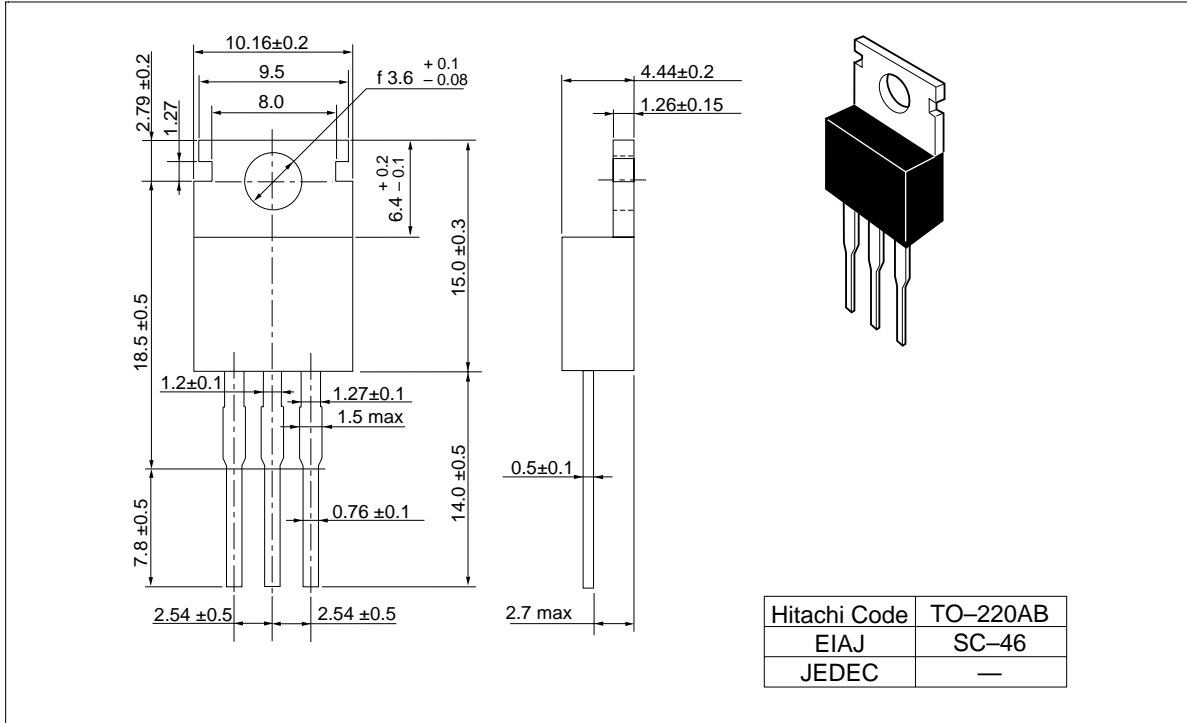




2SK3080

Package Dimensions

Unit: mm



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