BRGB40N65AHA

Rev.A Jan.-2026

DATA SHEET

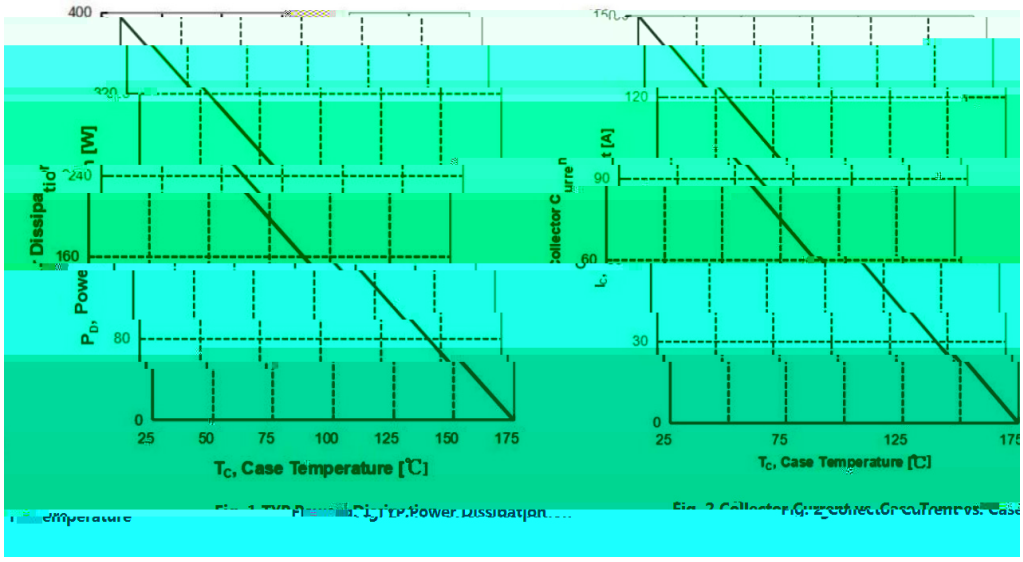
Parameter		Symbol	Rating	Unit
Collector-Emitter Voltage		V_{CES}	650	V
Gate-Emitter Voltage		V_{GES}	± 30	V
Continuous Collector Current	T_C=25	I_C	80	A
	T_C=100		40	A
Pulsed Collector Current , Limited by T_{Jmax}		I_{CM}	160	A
Continuous Diode Forward Current	T_C=25	I_F	80	A
	T_C=100		40	A
Diode Repetitive Peak Forward Current		I_{FRM}	160	A
Short circuit withstand time		t_{sc}	9	us
Power Dissipation	T_C=25	P_D	395	W
Storage Temperature Range		T_{STG}	-55 to +175	
Maximum Temperature for Soldering		T_L	260	
Maximum Junction-to-Ambient		$R_{\theta JA}$	40	/W
Maximum IGBT Junction-to-Case		$R_{\theta JC}$	0.38	/W

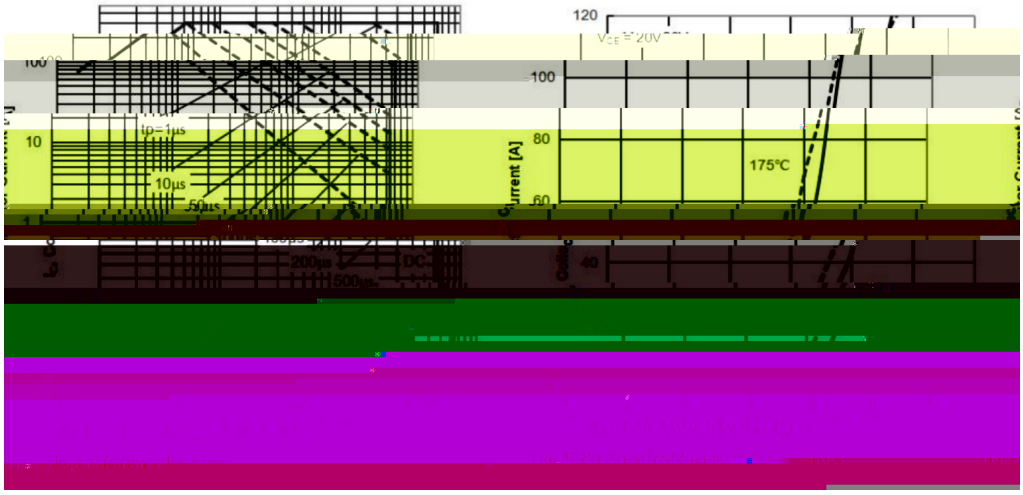
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage	BV_{CES}	I_C=1mA V_{GE}=0V	650			V
Zero Gate Voltage Collector current	I_{CES}	V_{CE}=650V, V_{GE}=0V			10	uA
Gate-Emitter Leakage Current	I_{GES}	V_{CE}=0V, V_{GE}= ±20V				

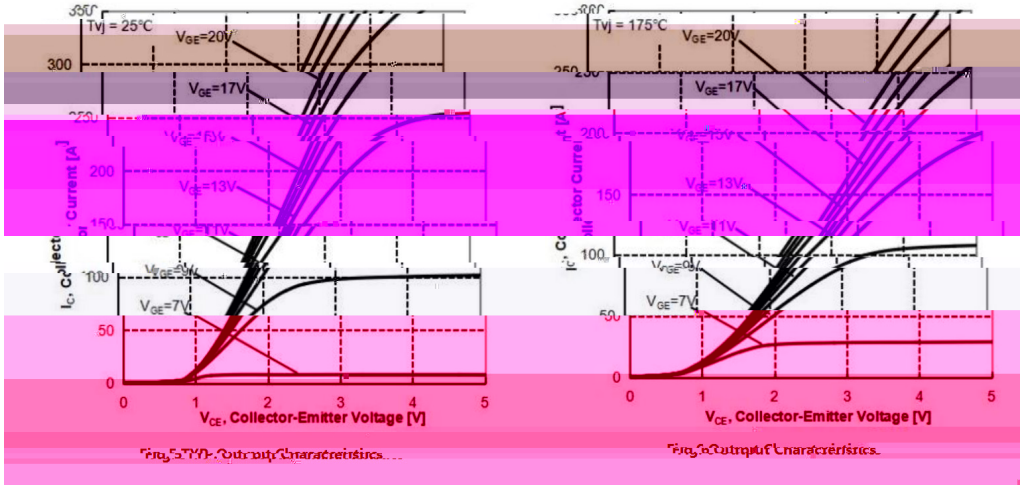
Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GE}=15V, V_{CE}=400V I_C=40A, R_G=5Ω Inductive Load	T_C=25		32		ns
			T_C=175		30		
Turn-On Rise Time	t_r		T_C=25		25		ns
			T_C=175		27		
Turn-Off Delay Time	$t_{d(off)}$		T_C=25		187		ns
			T_C=175		202		
Turn-Off Fall Time	t_f		T_C=25		15		ns
			T_C=175		18		
Turn-On Energy	E_{on}		T_C=25		0.95		mJ
			T_C=175		1.45		
Turn-Off Energy	E_{off}		T_C=25		0.65		mJ
			T_C=175		1.20		
Total Switching Energy	E_{ts}		T_C=25		1.60		mJ
			T_C=175		2.65		
Input Capacitance	C_{ies}	V_{GE}=0V, f=1MHz	V_{CE}=25V		5660		pF
Output Capacitance	C_{oes}				260		pF
Reverse Transfer Capacitance	C_{res}				154		pF

Diode Forward Voltage VF IF=1MHz VTw(ts)Tj10.4958 0 0 10.98 r01.6803 Tm( )Tj9.226F.8664 1.0629 TD(T)Tj7.08 304(d V)54.
mJ

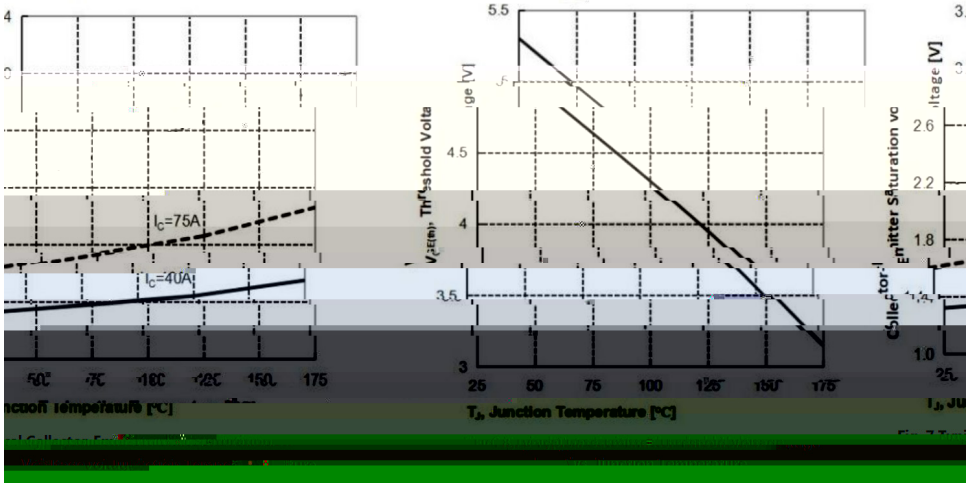
/ Electrical Characteristic Curve

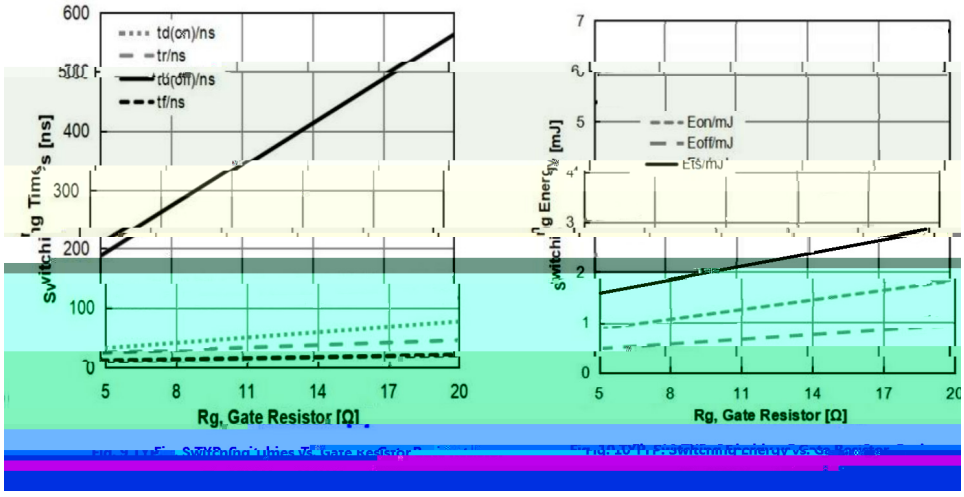


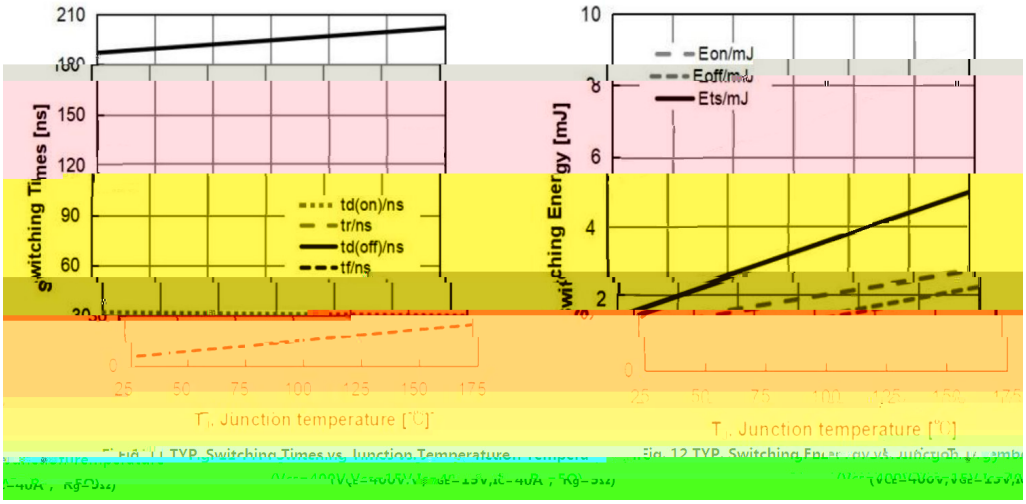




/ Electrical Characteristic Curve







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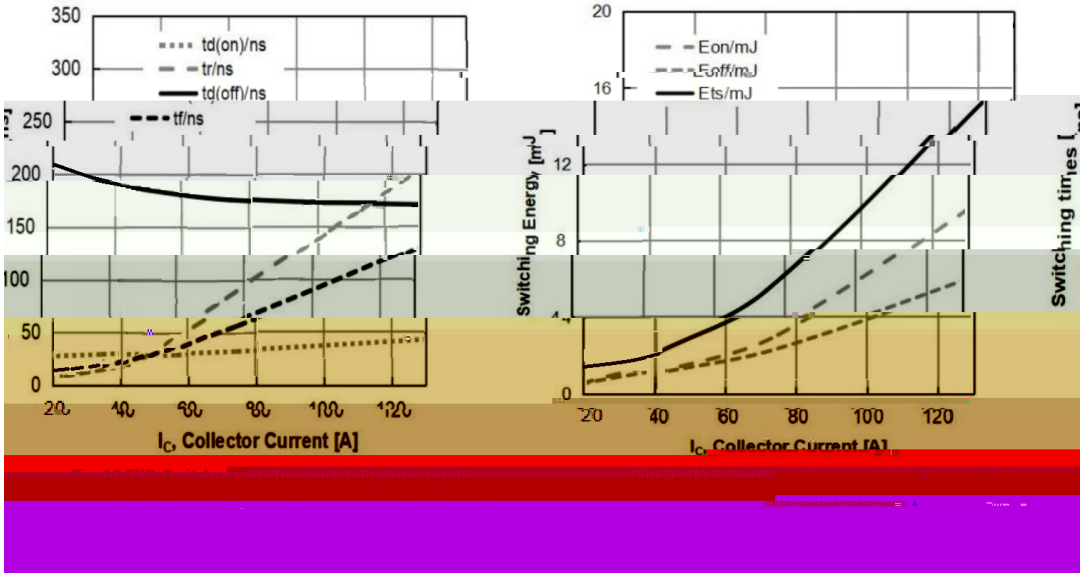

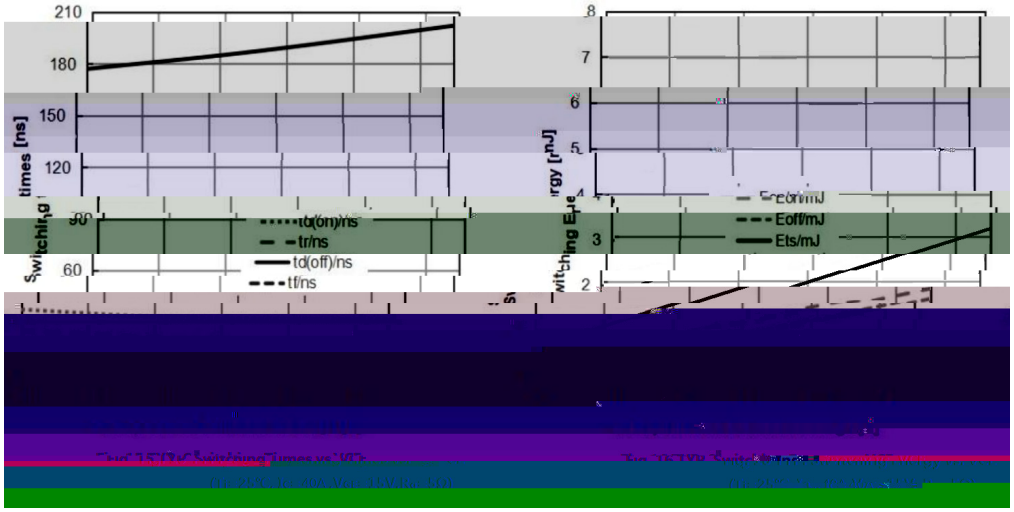

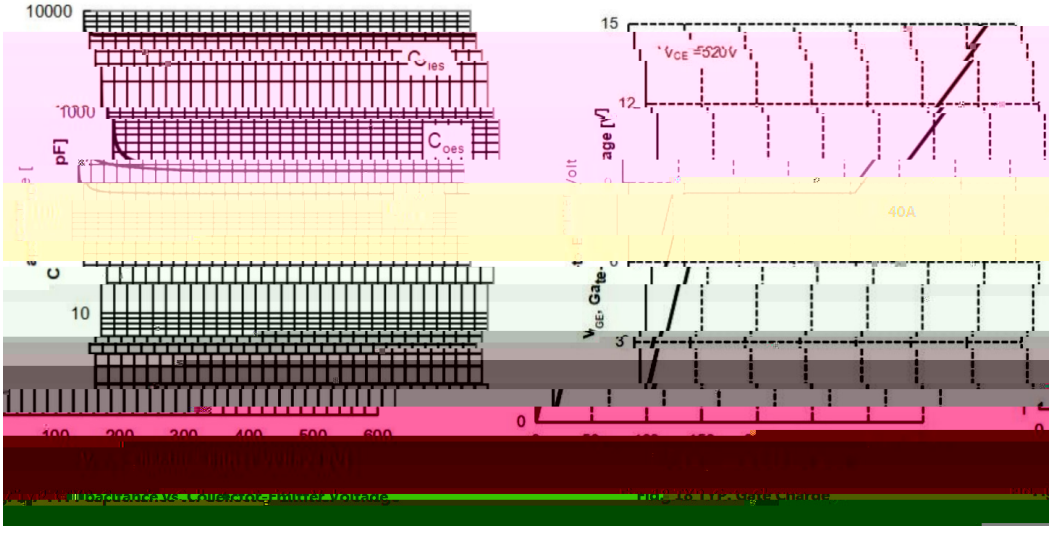

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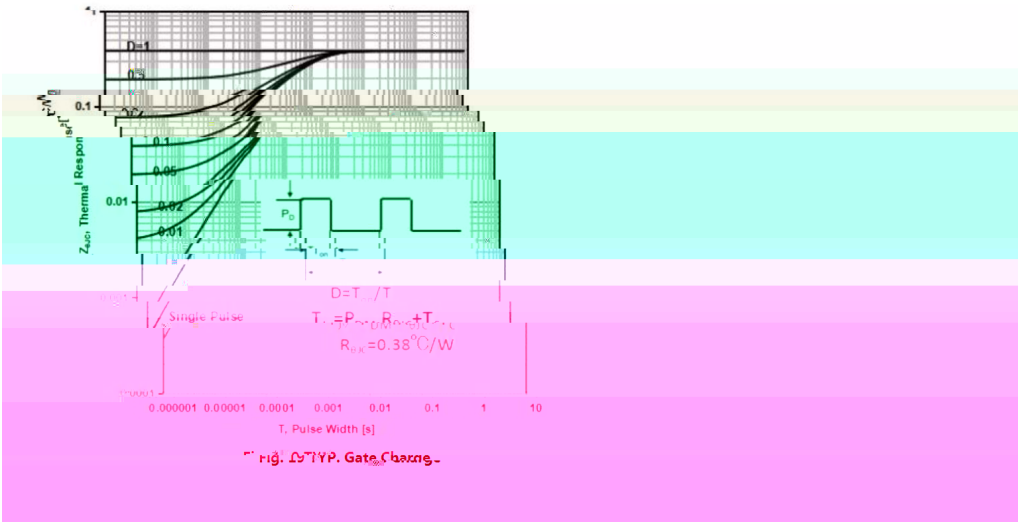
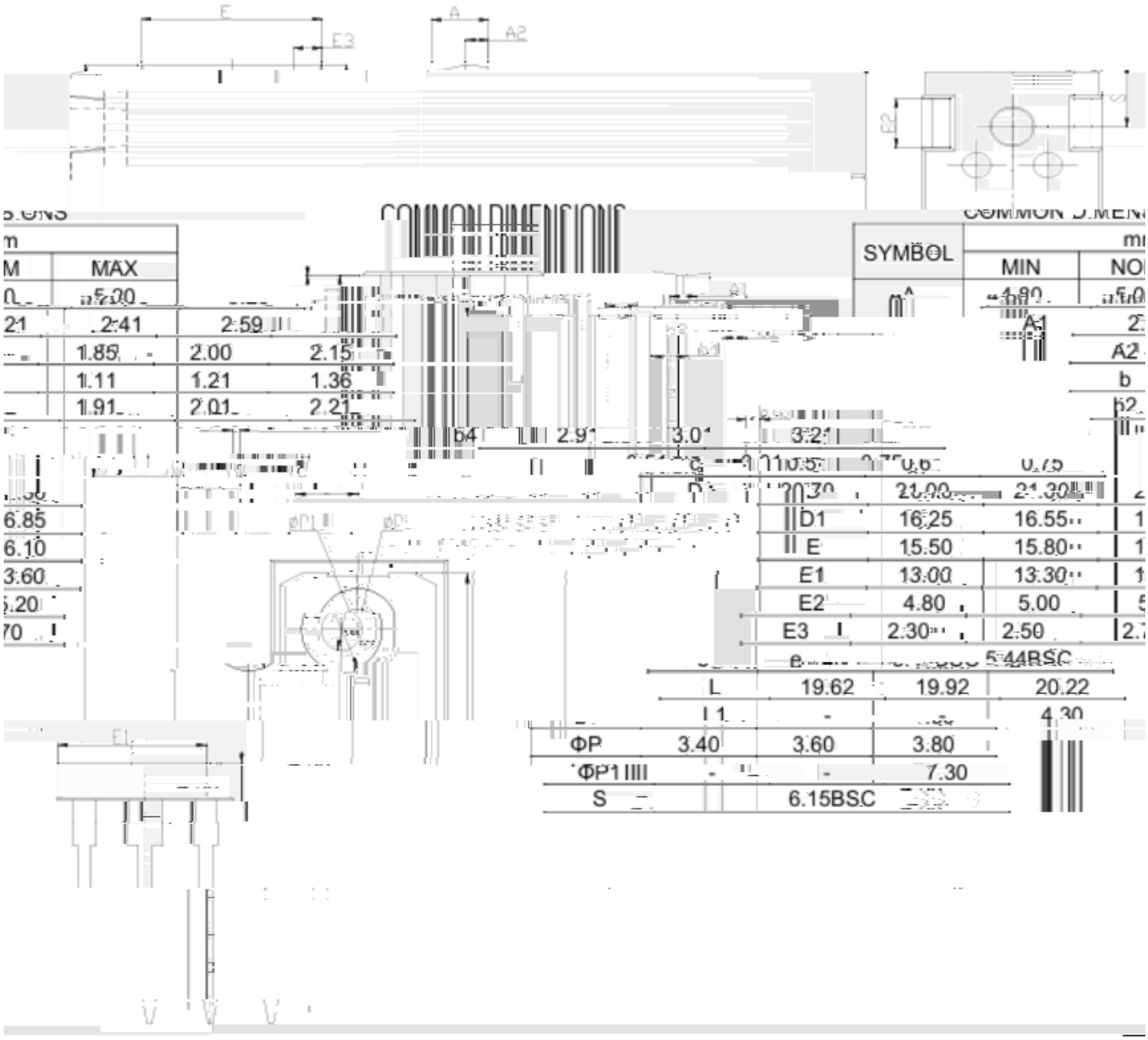


Fig. 17 TYP. Gate Charge

/ Package Dimensions



SYMBOL	MIN	NOM	MAX
A	4.80	4.90	5.00
A1	2.21	2.41	2.59
A2	1.85	2.00	2.15
b	1.11	1.21	1.36
b2	1.91	2.01	2.21
c	0.54	2.9	3.01
c1	3.21		
D	20.30	21.00	21.30
D1	16.25	16.55	
E	15.50	15.80	
E1	13.00	13.30	
E2	4.80	5.00	
E3	2.30	2.50	2.7
e		5.44BSC	
L	19.62	19.92	20.22
L1	-		4.30
ΦP	3.40	3.60	3.80
ΦP1	-	-	7.30
S		6.15BSC	

/ Marking Instructions

BR

GB40N65AHA

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Note:

BR:	Company Code
GB40N65AHA:	Product Type Code
****:	Lot No. Code, code change with Lot No.